

INPUT

STRATEGIC MARKET PERSPECTIVE

Global Retail Electronic Banking

Global Electronic Banking Program

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Global Retail Electronic Banking

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Abstract

This report is first of four strategic assessment projects of INPUT's 1996 Global Banking Program. It is concerned with retail electronic banking as defined and planned or implemented by banks throughout the world. The specific retail electronic banking services identified by banks are analyzed in the U.S. and in five regions of the world: Asia, Europe, Latin America, the Middle East / Africa and North America. The services that banks reported in this category include home banking; ATM, advanced ATM and kiosk services; Smart Cards; credit and debit cards; computer-based telephone services; and remote lending, mortgage, investment, insurance, annuity and personal trust services sold or to be sold via the Internet. Related topics such as use of the Internet, the impact of retail electronic services on banking and electronic payment are also discussed.

The assessment of retail electronic banking includes an analysis of the benefits that banks have gained or expect to gain from these products and services. The analysis indicates the relative importance of benefits such as revenues, cost reduction, new or retained accounts, cross-sales, and satisfying customer demand. The benefits are also examined over a five-year period (1996-2001) in order to assess the magnitude of future benefits in relation to the costs of developing products and services.

In addition to examining benefits, the project analyzes the trends, driving forces, inhibiting factors, problems that banks report in relation to retail electronic banking services, and solutions they have found. Comparisons of benefits, drivers and trends are made among regions and between the U.S. and other areas of the world. The project also provides a forecast for each retail electronic banking service in terms of its penetration over the next five years (1996-2001) in banks in major global regions and in the U.S.

The analysis of retail electronic banking also includes information on how the Internet is being used as an integral part of or to support retail electronic services and what factors are driving or inhibiting the use of the Internet for this purpose. In addition, the impact that retail electronic banking services are having on bank operations and administration and the use of vendor services to implement or outsource these services is reported and analyzed.

Research for this report included data gathered from over 170 banks and 49 vendors, as well as contacts with banking industry consultants and reviews of secondary sources of information.

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Global Banking Program

Global Retail Electronic Banking

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Introduction

A

Purpose

1. Definition of Retail Electronic Banking

In this study of retail electronic banking, INPUT developed an initial definition based on information obtained from a group of 30 banking institutions and consultants to banks who contributed ideas that helped to define the issues to be addressed in the study. The initial definition was reviewed and modified as the result of interviews with banks, bank consultants, and vendors.

The initial definition of retail electronic banking was the set of electronic services that can be used by individuals for their own financial needs without visiting a bank branch or office. Some banks and vendors pointed out that ATMs and other devices involved in electronic services could be used in bank branches or mini offices in markets. The consensus of opinion was that retail electronic banking services should be defined by the set of services that banks and vendors would think of in relation to the topic.

The definition that was acceptable to the majority of respondents was that retail electronic banking was the set of services that involve electronic capabilities for the individual bank customers including home banking; card-operated devices such as ATMs, advanced ATMs, or kiosks; Smart Cards or cards with electronic components that make it possible to store, update and authorize financial transactions in contact devices; credit and debit cards as commonly used; computer-based telephone services for retail banking business; and retail banking business such as the sale of lending arrangements or investment products that can be conducted on the Internet.

2. Overview of Research on Retail Electronic Banking

This study provides a global analysis of the use of retail electronic banking that concentrates on the following issues:

- What electronic banking services are growing most rapidly in the U.S. and worldwide?
- What present or anticipated services are generating the greatest payoff in terms of new accounts, additional revenues, and fees in the U.S. and worldwide?
- Which services are most effective in producing cost savings?
- What services and features have been most effective in gaining new accounts and maintaining present ones?
- What additional benefits do banks project for retail electronic banking services?
- Will electronic banking help to generate and service personal lending, mortgage, investment, and insurance business for banks?
- Are there unfulfilled or partially met needs of bank customers that will be met more fully with further developments of retail electronic banking in the next five years?
- Will technology make it possible for major improvements in retail electronic banking to improve services to customers or the bottom line for retail banking substantially?
- Will banks find it necessary to implement changes in retail electronic banking rapidly to achieve results or hold accounts, even if present investments are not written off?
- How has the Internet been used in retail electronic banking? What has the payoff been for using the Internet? What steps should be taken?
- Will use of the Internet be necessary to meet customer needs for retail electronic banking services?
- What factors should be considered in evaluating retail electronic banking services?
- What are the risks of delaying the introduction of these services?
- What risks and potential problems should be considered in launching electronic banking services and using the Internet?

B**Scope**

This study is devoted to the impact of retail electronic banking on banks and banking activities throughout the world. Information is presented about the retail electronic banking services of greatest importance to banks and on the Internet that play a key role in supporting retail electronic banking services. Information is presented that can be used to analyze the trends, driving forces, benefits, and growth of retail electronic banking services over the period from 1996 to 2001.

Conclusions and recommendations are developed in relation to the retail electronic banking services discussed and in relation to the changes in banking that these services are bringing about.

C**Research Methodology**

Discussions were held with leading banks and banking industry consultants to develop ideas on the purpose and scope of this study as well as the issues and interview forms utilized in the study.

Interviews were held with 169 banks, and 49 vendors and consultants to explore the issues identified in research related to this study. Multiple interviews were held at large banks. The number of final interviews, shown in appendix A, were close to the targets of the planning structure. The total number of interviews was 200.

Exhibit I-1

Planning Structure For Interviews

Region	Country/Number of Interviews	Size of Bank	Number of Vendors
Asia/Pacific	Australia (3), China (2), Hong Kong (3), India, Japan (10), Korea (3), New Zealand, Taiwan (2)	Large (Above \$15 billion), medium (\$5 billion to \$15 billion) and small	3
Europe	Benelux (4), Denmark, France (6), Germany (5), Italy (4), Switzerland (5), Spain (2), Sweden, U.K. (5)	Large, medium, and small	11
Latin America	Argentina (2), Brazil (3), Chile (2), Mexico (4), Venezuela	Large, medium, and small	2
Mid-East/Africa	Egypt, Israel, Saudi Arabia (3), South Africa (3)	Medium, small	1
North America	Canada (6), United States (92)	Large, medium, and small	32
Total	169		49

Source: INPUT

Ideas that were developed from interviews and research materials were discussed with selected major banks and vendors and consultants who serve the banking industry. Interview documents were tested with banks before starting the interview process.

D**Report Structure**

This section introduces the study and describes the purpose, scope, and methodology of the study.

Chapter II, the Executive Overview, provides an overview of the study and the environment involved and summarizes the findings of the study, emphasizing the issues raised and significant findings. Recommendations are given for banks concerned with responses that should be considered. Recommendations are also given for vendors in the banking field.

Chapter III provides information on retail electronic banking services offered in the U.S. market and Chapter IV provides information on regions elsewhere in the global market.

Chapter V analyzes information collected from worldwide sources about the impact that the Internet will make on retail electronic banking.

Chapter VI analyzes the impact that global retail electronic banking will make on retail banking operations and administration.

Chapter VII provides a comparison between the impact of global retail electronic banking in the U.S. and in other regions.

Appendix A contains a list of banks interviewed for this report.

Appendix B contains the questionnaire used for this report.

E

Related Reports

Financial Transactions on the Internet, 1996-2001

Global Corporate Electronic Banking

Worldwide Banking Information Services, 1997-2002
(to be published 1/97)

(BLANK)



Executive Overview

A

The Impact of Retail Electronic Banking

Most banks, as well as vendors providing services to banks, are concentrating on specific retail electronic banking services such as home banking, advanced ATM capabilities, and remote sales of lending and investment products, but the collective impact of these services has to be considered because it will involve a massive change in retail banking.

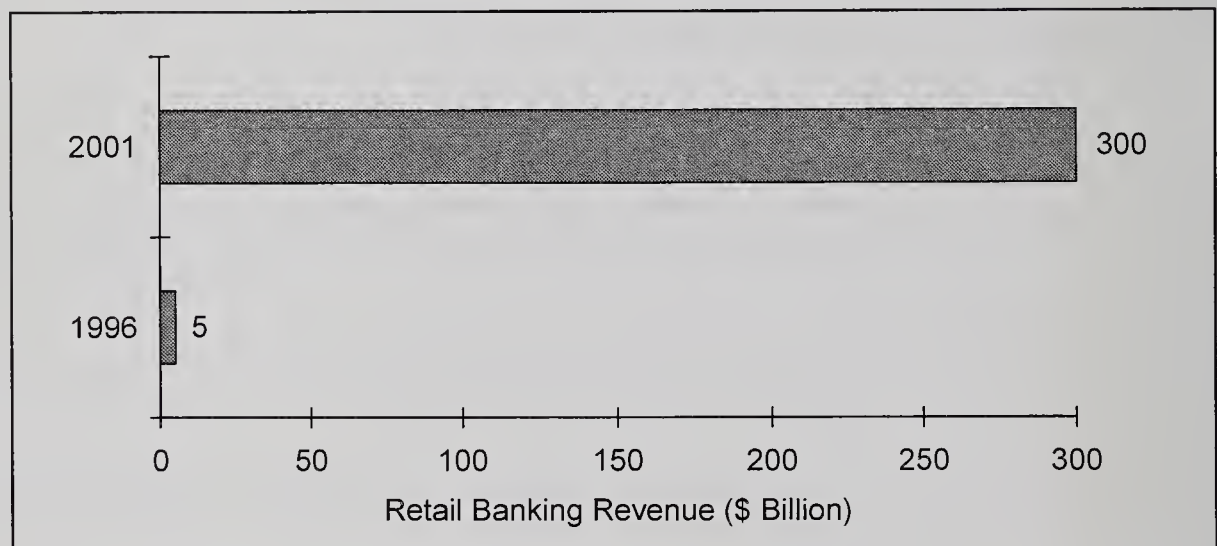
- Retail banking is becoming dependent on the ability to deliver remote electronic services to customers.
- The Internet is becoming a significant form of connectivity between retail customers and banks.
- Retail electronic banking will be able to guide and influence the financial business of customers.

The delivery of remote, convenient services will enable retail electronic banking to grow rapidly in use and improve relationship management of retail accounts. This will allow an increasing impact to be made on bank revenues from those accounts, both noninterest and interest income, according to major banks and banking consultants.

- These services will influence and control an increasing amount of individual financial activity at a bank, including payment, use of mortgage and lending products, investments, and insurance products, even if an individual does not have all of his or her accounts at the bank.
- Projections based on discussions with major banks show an increase in bank revenues (interest as well as noninterest income) attributable to these products, increasing from less than 3% of current bank business to more than 20% of bank business, a global impact of about \$300 billion by 2001, as illustrated in Exhibit II-1.

Exhibit II-1

Estimate of Banking Business Driven by Retail Electronic Banking



Source: INPUT

Retail electronic banking services will guide the lending, payment, investment, and insurance business of bank customers. Electronic banking services will grow from the use of a handful of unconnected products to a set of integrated capabilities that serve most financial needs of an individual. Due to the success of these services, competition for this business from nonbanks will rise sharply during the next five years.

- Competition from brokerage firms will expand from CMA types of accounts to attractive, competitive packages of retail electronic banking and finance services, as well as investment and insurance products. The objective will be to establish the brokerage firm as the primary point of delivery of individual financial services.
- Insurance companies will also expand offerings to include on-line services that tie together retail banking, investment, and insurance products.

- A small number of information technology companies will develop significant capabilities in banking and payment services and partner with financial companies, a regional bank, or a brokerage to present a full set of retail electronic products. This will provide the means for a vendor to become the principal point of contact for supplying services to an individual.

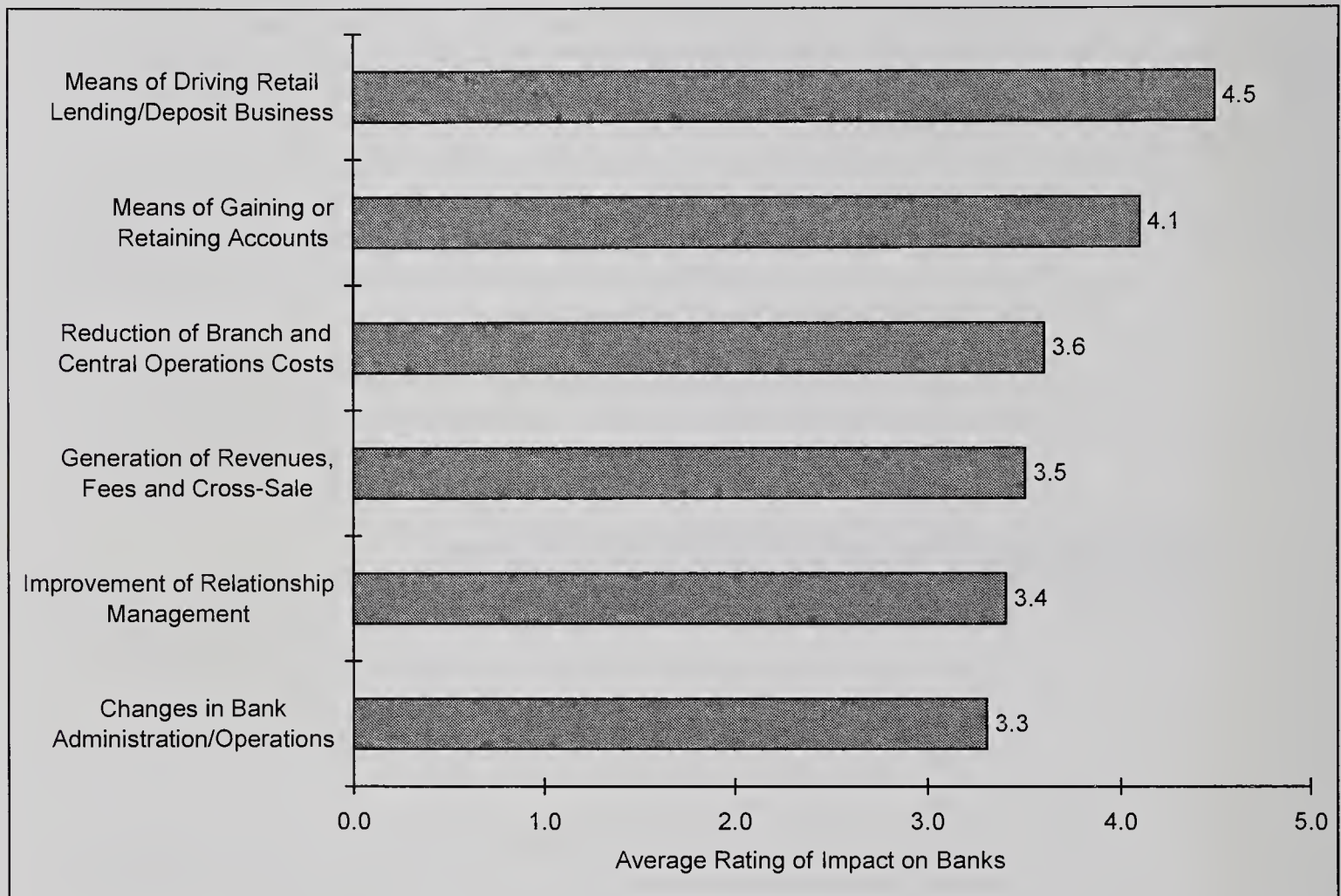
Competition between retail electronic services from banks and brokerage houses is already taking place, according to the executive of a major SI firm that was involved in a project to ensure that a Quicken user at a bank could obtain similar services at a brokerage firm.

Vendors may provide an invisible presence that a bank could use to tie together individual services. A joint label is possible though less likely (e.g., Foresight MSN Bank). Home banking/financial planning software and/or network capabilities will be factors that vendors use to interest banks in support services and joint undertakings.

- Other capabilities such as offering network guidance or aid to a user who does not have the time or the inclination to use products like Quicken may be a factor that attracts banks to vendors. Some vendors are experimenting with game-like ideas or a “wizard” to supply this capability. One vendor described a potential home banking product that would be offered on the Internet to “thin” PCs.
- Another service that could attract banks to vendors would be the ability to keep a person who is on vacation, sick, or busy up to date on home banking, investment, credit card and other accounts by obtaining bill and payment data from the financial institutions involved and setting up means for keeping accounts up to date. Quicken has delivered software that addresses aspects of the problem of keeping accounts up to date.

In addition to providing a means of guiding or controlling individual financial business, retail electronic banking services will aid banks by providing a positive impact on revenues and costs, the ability to compete for new accounts, and relationship management, as shown in Exhibit II-2.

Exhibit II-2

Global Impact of Retail Electronic Banking

1 = Low and 5 = High

Source: INPUT

The global impact of retail electronic banking services will also enhance the ability of banks to combine or integrate services.

- Citibank now advertises that customers can use home banking, ATMs or Direct Access phone service to make payments and manage balances, since these services are integrated.
- Andersen Consulting points out that developments are in place to allow a bank customer to initiate stock purchases and transfers of balances from home, check the status of activity at an ATM device, and phone a bank telephone service during the day to take follow-up actions.

B**Findings****1. Retail Electronic Banking Services in the U.S. and Worldwide**

The services banks reported as members of this grouping are listed below:

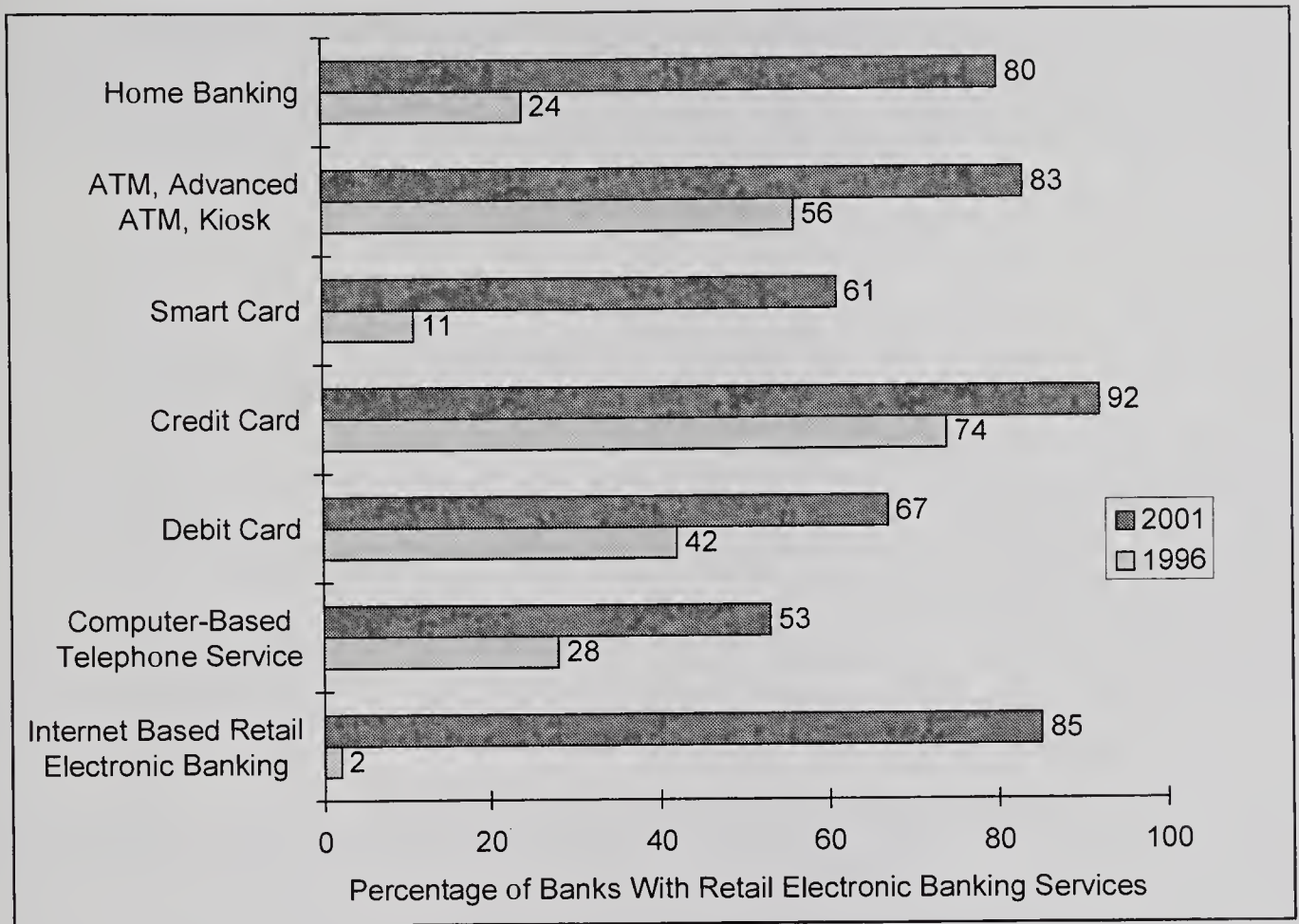
- Home banking, including systems that use a terminal or a PC to initiate bill paying and other functions such as balance inquiry and transfers. The home banking services could also include a review of financial information on potential investments and the input of purchase instructions. The Internet is being used to connect banks and their customers for home banking services.
- ATM, advanced ATM, and kiosk systems that can dispense cash, take deposits, and accomplish other functions such as paying bills and transferring funds (or even dispense stamps, money orders or other items). These units will be connected to card organization networks for authorization and cash dispensing and to the Internet for other purposes such as providing information on lending arrangements or obtaining customer data.
- Smart Cards with a stored value of money that can be used to pay merchants or service providers. The cards are growing in popularity as a means of paying small transactions without using pocket money; they can be updated at an ATM or bank. Smart Cards are also being tested as a means of making payment on the Internet and are being used to store medical or other information.
- Credit and debit cards. Debit cards are being combined with ATM access cards in many locations, and multifunction cards that combine financial and other capabilities are beginning to be issued. In addition to flowing on card organization networks, credit and debit card data is now being used on network services and the Internet.
- Computer-based telephone services offer standard bill paying, inquiry, balance transfer, investment, and expanded types of services that include more bank functions as well as proactive marketing of bank services. These services will also make use of E-mail on the Internet to distribute some information.
- Remote sales of lending, mortgage, investment, annuities, personal trust, financial planning, and insurance products via the Internet. The Internet is also being used to collect data and deliver E-mail in relation to these services.

Other network providers or on-line services may also provide the lending, mortgage, and investment services discussed above, but the Internet will be the dominant network means of marketing and distributing these remote services, according to bank respondents. The large number of potential customers, the propensity of prospects to look for and buy services on the Internet, and cost considerations will drive these services on the Internet.

New retail electronic services are emerging, including remote personal financial planning services and the ability to tie together many different types of financial activity for on-line retail customers. Other electronic services will emerge in the next five years to help customers gain more effective aid from their banks and/or other financial services institutions.

Some retail electronic banking services have already penetrated a high percentage of banks while others have only begun to be used, as illustrated in Exhibit II-3.

Exhibit II-3

Use of Retail Electronic Banking Services Globally in 1996 and 2001

Source: INPUT

Internet-based services represent only a fractional use of the Internet by banks. The Internet will also be used for connecting home banking users to banks, communicating selected information between advanced ATMs or kiosks and banks, handling some Smart Card transmissions of payment to merchants, and communicating general information from banks and other financial services organizations to bank customers.

- Total use of the Internet for retail electronic banking services will increase from a estimated level of about 2% of banks worldwide to about 85% of banks worldwide by 2001.
- A steadily increasing number of banks have home pages on the Internet, but many have not initiated any retail banking services on the Internet.

The increase in penetration of retail banking services will be less dramatic in Europe and the U.S. than it will be in the rest of the world, since these services are presently used to a greater extent in the U.S. and Europe, as illustrated in Exhibit II-4.

Exhibit II-4

Estimated Use of Retail Electronic Banking Services by Region in 1996

Retail Service or Product	Percent of Banks in Asia	Percent of Banks in Europe	Percent of Banks in Latin Am.	Percent of Banks in ME/Africa	Percent of Banks in U.S.
Home Banking	14	34	11	5	28
ATM, Advanced ATM, Kiosk	40	63	35	9	73
Smart Card	4	20	3	2	10
Credit Card	48	80	50	35	96
Debit Card	35	50	35	20	45
Computer-Based Telephone Service	15	36	18	10	34
Internet Use For Retail Electronic Banking Services	2	2	2	1	3

Source: INPUT

2. Significant Trends and Factors Involved in Retail Electronic Banking

The tremendous growth taking place in retail electronic banking services is a reflection of the desire of consumers for more convenient services at home and at places where they are needed rather than at traditional bank locations.

- One leading bank vendor reported that it has developed an estimate of the decrease in use of branches by affluent depositors during the last five years, and found it was greater than 50%. Over half of the transactions that would have been made at branches were diverted to other means.
- A high percentage of banks and vendors or consultants involved with banking anticipate a greater decrease in the use of branches in the next five years.

Over two-thirds of banks are analyzing the changes that are taking place in information technology and in consumer behavior in regard to bank use, but many banks are not paying attention. They are not focusing on new developments in banking technology being introduced by competitors. These developments are taking advantage of PC and network capabilities, particularly the Internet, as illustrated in Exhibit II-5.

Exhibit II-5

Leading Trends in Retail Electronic Banking Services

Retail Electronic Banking Service	Leading Trends Reported by Banks Worldwide
Home Banking	Growth of home banking services PC rather than terminal desired by users Personal finance software growing in interest
ATM, Advanced ATM, Kiosk	Growth in use of ATMs Growth in types of services offered through ATM/advanced ATM (and kiosk)
Smart Card (with Stored Value)	Growth in number of pilots Growth in plans to launch Smart Cards
Credit Card	Growth in use Expanding competition from banks/nonbanks in all regions Card Organizations expanding into other services
Debit Card	Growth in use More acceptance by consumers and merchants Expanding competition in all regions
Computer Based Telephone Service	Increase in offerings and functions provided Integration of Service With Other Bank Offerings Such as Home Banking
Internet Based Services	Increasing interest in remote banking services supplied by Internet in all regions

Source: INPUT

The preceding exhibit emphasizes that banks see strong trends for the growth of retail banking services. Banks also emphasize that these trends reflect a high level of customer interest, particularly by one group of customers.

- Customers who want retail electronic banking services tend to be ones whose schedules require remote, convenient services. They also tend to be customers who are more affluent and knowledgeable about technology.
- This type of customer is reported by banks in the U.S., particularly, and also by banks in Asia and Europe. These customers are emerging in Latin America and the Middle East and Africa.

Banks also point out that most customers or depositors now demand retail electronic services such as ATMs and credit cards and, in some countries, debit cards. Banks anticipate that demand from all customers will increase and cover the full spectrum of the services being discussed.

- The major driving force that banks report for retail electronic services is the demand of customers or satisfying customers, as indicated in Exhibit II-6.
- Banks also point out drivers that refer to bank performance, such as revenues, cost reduction, new accounts, and cross-selling. These are highlighted in Exhibit II-6.

Exhibit II-6

Drivers Rated First and Second for Retail Electronic Banking Services

Retail Service or Product	Drivers in Asia, Europe, Latin America, Mid-East/Africa	Drivers Reported in North America, U.S. and Canada
Home Banking	Competing for New Accounts and Meeting Demands of Customers	Demands of Customers and Opportunity to Take Advantage of Wide Use of PC
ATM, Advanced ATM, Kiosk	Cost Reduction and Meeting Demands of Customers	Customer Desire for Convenience and Bank Desire to Reduce Branch and Operational Costs
Smart Card	Convenience to Customers and Greater Card Security	Interest in Stored Value and Desire for More Security
Credit Card	Customer Demand and Revenue	Demand by Customers and Revenue Opportunities
Debit Card	Customer Demand and Cost Reduction	Competition to Retain and Gain Accounts; Cost Reduction
Computer-Based Telephone Service	Customer Demand and Cross-Sales	Customer Demand and Ability to Cross-Sell
Internet-Based Services	Customer Demand and Technology	Customer Demand and Internet Technology

Source: INPUT

As noted above, banks do identify drivers related to bank performance. A small group of banks, mostly larger ones (money center and super regional in the U.S.), were more concerned about drivers that would improve bank performance and tended to rate them slightly higher than other banks did.

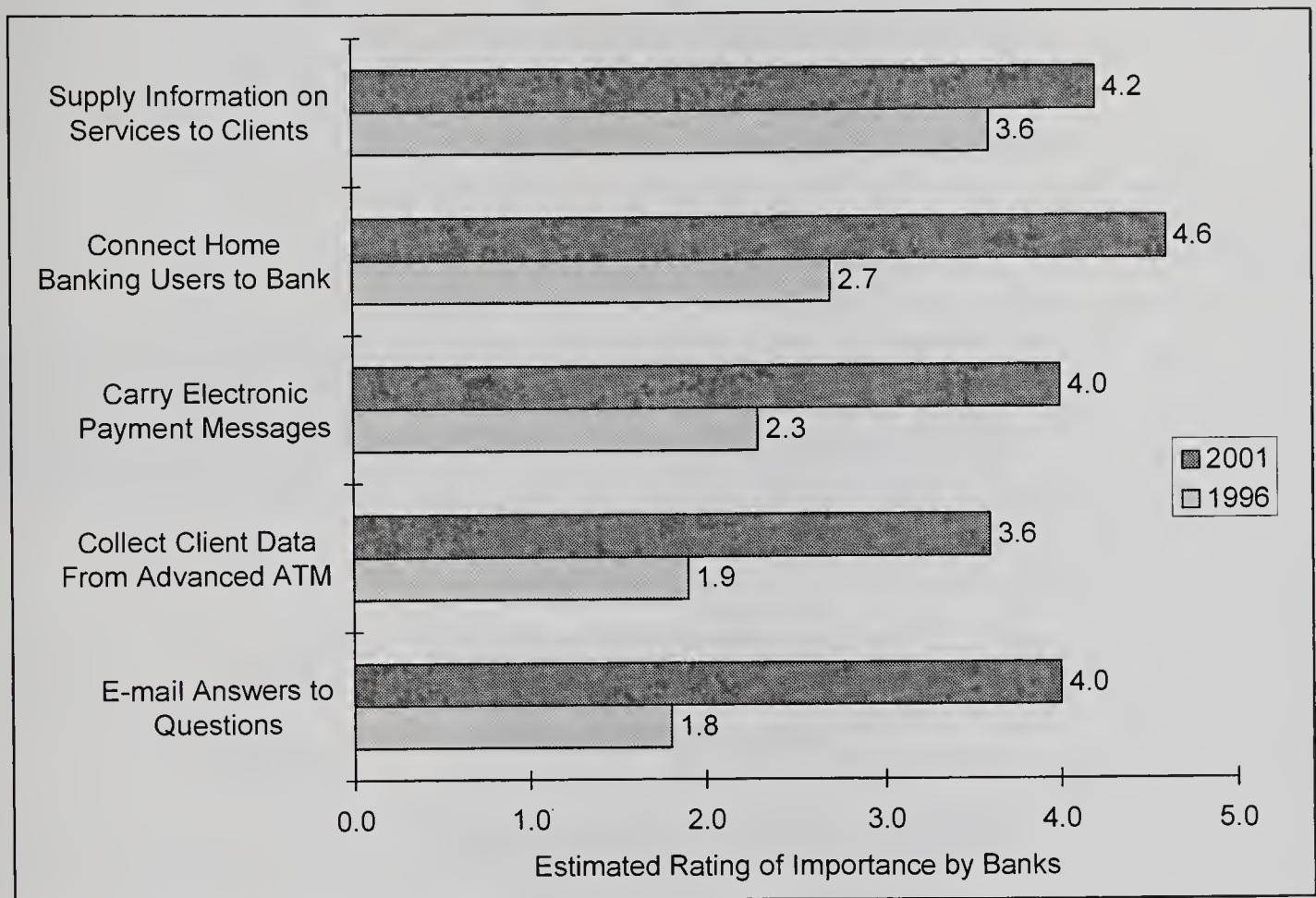
- These banks stated that costs of retail business had to fall by one-third to one-half if revenues and profitability didn't rise.
- Costs have to be reduced through reductions in the number of branches and branch and head-office personnel handling retail business. This could result in personnel reductions of up to 50% .

The introduction and use of network services is another driver that is highly important in the introduction and growth of retail electronic banking services.

- Visa, MasterCard, and other card organizations and network services processors have been vital to the growth of ATM use and credit and debit card use.
- Card organizations and on-line service providers such as America Online, CompuServe, and Prodigy have helped introduce home banking services.
- One development in network services that promises to aid the growth of retail electronic banking services greatly, according to banks, is growth in use of the Internet. The role that the Internet is expected to play is illustrated in Exhibit II-7.

Exhibit II-7

Uses of the Internet in Retail Electronic Banking



1 = Low, 5 = High

Source: INPUT

- A number of banks are already engaged in activities involving the use of the Internet with retail electronic banking services, but most banks reported that they are in planning or evaluation stages. Citibank, U.S. Bancorp and other banks have announced that home banking customers will be connected to the bank by means of the Internet.
- Wells Fargo is soliciting loan business on the Internet and using a clever home page approach to attract business. The bank also has a partnering arrangement with Cybercash for arranging payment on the Internet.
- A large bank is experimenting with on-line graphics and games on the Internet that could aid home banking users as well as attract new banking accounts from browsers who want to try out a demonstration of the service.

3. Benefits Reported for Retail Electronic Banking

The benefits reported or anticipated, on the average, across all regions, emphasized customer satisfaction or demand. Analysts from several leading banking vendors feel that this demand is a positive factor because it will steer development of services toward customer or consumer need. A number of other benefits were also mentioned, as shown in Exhibit II-8.

Exhibit II-8

Highest Rated Benefits for Electronic Banking Services, U.S. and Non-U.S.

Retail Service or Product	Highest Rated Benefits in Non-U.S. Locations	Highest Rated Benefits in U.S.
Home Banking	Satisfy Customer Demand New Accounts Cost Reduction	Satisfy Customer Demand New Accounts Cross-Sales
ATM, Advanced ATM, Kiosk	Satisfy Customer Demand Cost Reduction Cross-Sales	Satisfy Customer Demand Cost Reduction Revenues
Smart Card	Satisfy Customer Demand Cost Reduction Revenues	Satisfy Customer Demand Revenues Cost Reduction
Credit Card	Satisfy Customer Demand Revenues Cross Sales	Revenues Customer Demand New Accounts
Debit Card	Satisfy Customer Demand Cost Reduction New Accounts	Customer Relationship Cost Reduction New Accounts
Computer-Based Telephone Service	Cross-Sales Satisfy Customer Demand New Accounts	Satisfy Customer Demand Cross Sales New Accounts
Internet Based Services	Satisfy Customer Demand Competitive Advantage Revenues	Satisfy Customer Demand New Accounts Revenues

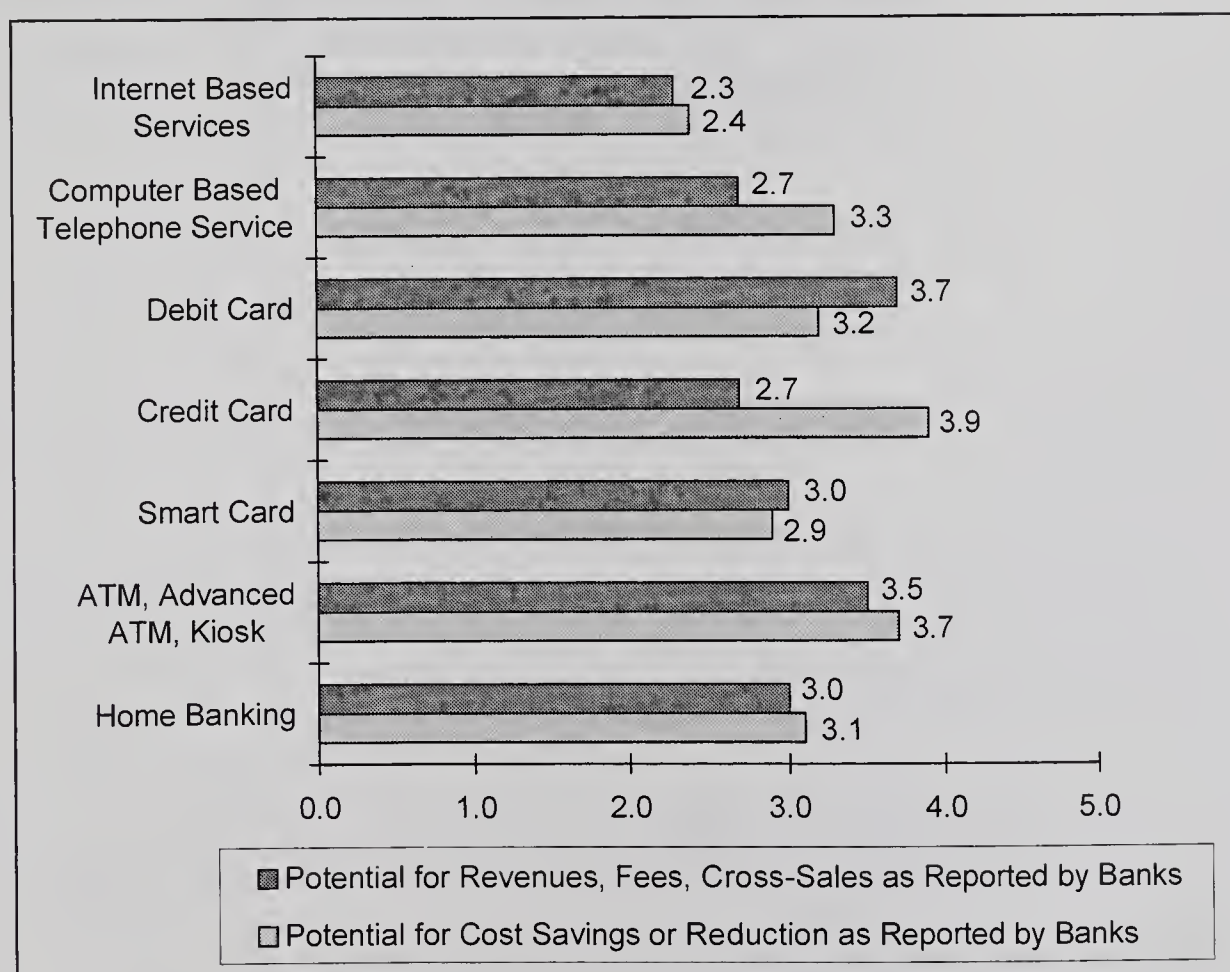
Source: INPUT

One difference in the ratings given by U.S. banks is that five of these services are rated as providing top opportunities for new accounts, whereas non-U.S. banks rate three services as new account opportunities. Non-U.S. banks also rate fewer services as top opportunities for revenues.

A group of banks report that their plans for introducing retail electronic banking services are influenced by opportunities to gain "hard benefits," including revenues, cost savings, new accounts and additional business from clients. The relative effectiveness of retail electronic services, in terms of their potential to deliver revenues or additional business through cross-sales and savings through cost reductions, are indicated on a global basis in Exhibit II-9.

Exhibit II-9

Relative Effectiveness of Electronic Banking Services for Gaining Revenues or Saving Costs



Source: INPUT

Credit cards stand out as a revenue or additional business opportunity, followed by ATMs. A number of banks questioned whether ATMs obtained sufficient revenue to cover costs, and there have been recent increases in fees to cover costs.

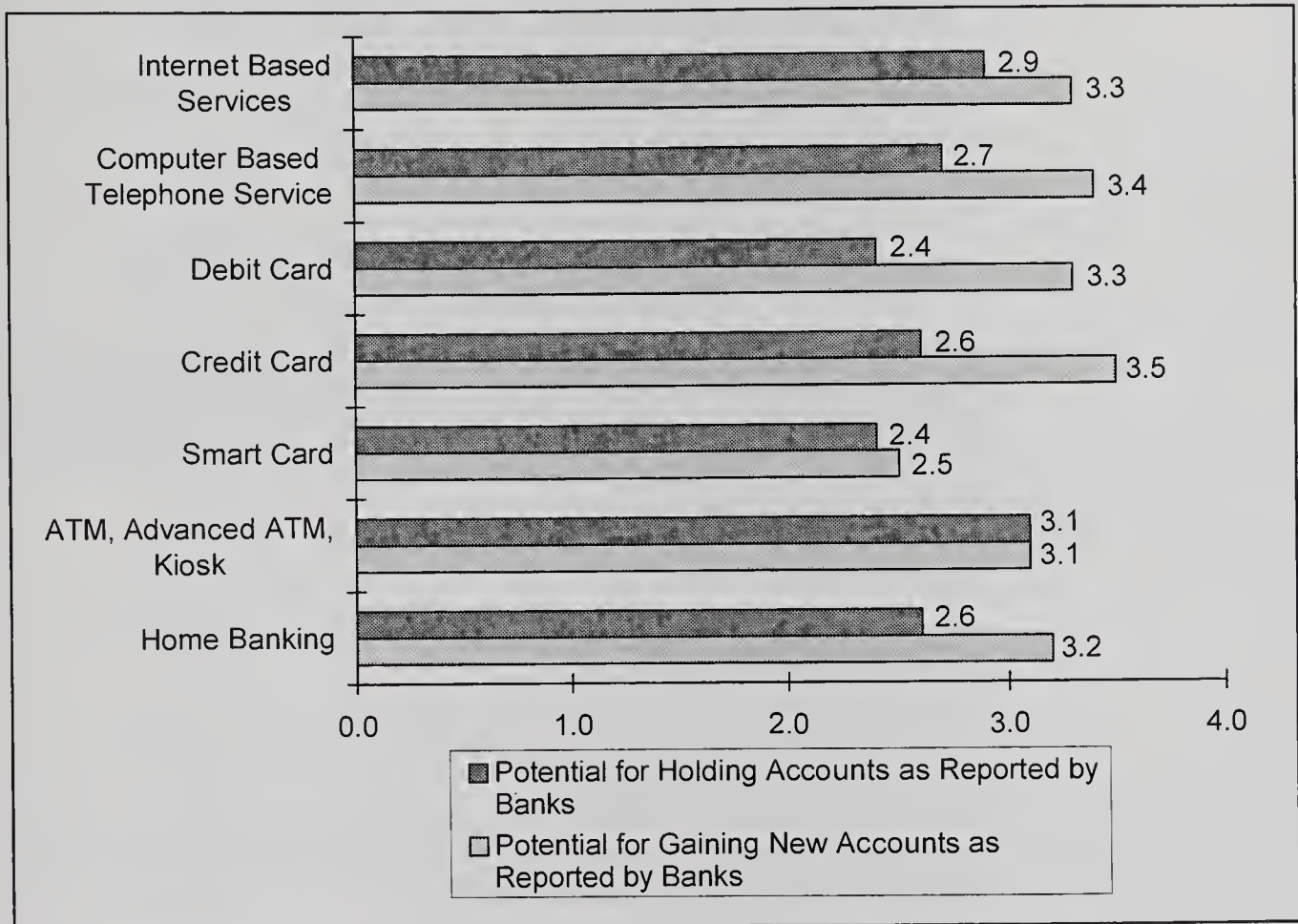
ATM and debit card service were rated highest in terms of cost savings, based on the plans of banks to use these units to reduce branch costs. Several banks emphasized that the use of debit cards at grocery and other stores had reduced the number of checks cashed at banks for spending money. One of these banks mentioned that Smart Cards should intensify that trend.

- A number of banks stressed that another important reason for initiating retail electronic banking services is to gain or maintain customer accounts. These banks point out that customer demand for retail electronic services is a major driver for new accounts at the present time.
- These banks also report that many potential customers will go elsewhere if services such as credit cards, ATM cash machines or home banking are not provided.

The relative importance of retail electronic services is measured by these banks in terms of their ability to attract or hold accounts, as illustrated in Exhibit II-10.

Exhibit II-10

Effectiveness of Retail Electronic Banking Services for Gaining or Holding Accounts



1 = low, 5 = High

Source: INPUT

Except for Smart Cards, which are still new on the scene to many banks, the other retail electronic services are rated moderately well in terms of the ability to attract accounts. However, bank responses are mostly driven by vocal, upscale consumers who have technical capabilities and larger bank accounts. There may be a significant number of consumers who are not as driven by retail electronic capabilities.

Benefits of gaining or saving accounts or gaining more revenues or cost savings are not the only benefits banks attribute to retail electronic services.

- A group of banks report that some of these services have been effective in achieving reengineering or business goals. For instance, banks are installing ATMs in branch offices to reduce costs and/or improve services for depositors.

- Other banks report that several of these services have been integrated into a plan to support relationship management. For instance, use of credit and/or debit cards and home banking or other services results in lower checking account fees and/or other benefits.

The additional reasons banks give for offering retail electronic services are summarized in Exhibit II-11.

Exhibit II-11

Other Benefits or Reasons for Offering Retail Electronic Banking Services

Other Benefits or Reasons for Offering Retail Electronic Banking Services Reported by Banks	Estimated Rating of Importance to Offering Banks
Meeting Competition of Banks or Nonbanks That Have Business in The Same Market	4.2
Opportunity to Work With Consortium on Home Banking, Smart Cards or Other Services	3.9
Part of Plan for Reengineering or Restructuring Business of Bank	3.8
As Part of Plan to Upgrade Basic Retail Systems	3.2

Low = 1 and High = 5

Source: INPUT

A small percentage of banks also report that they feel these services are inevitable in the marketplace, and they will integrate them into their business planning as opportunities present themselves.

4. Considerations Regarding the Use of Electronic Payment

General topics reported by banks in relation to electronic payments included:

- Current electronic payment methods that make use of the ACH or card exchanges
- Smart Cards with a stored value capability to be used in a reader for purchases of goods and services, as well as nonidentifiable cards purchased for use in telephone or transit systems, or contactless cards
- Digital cash, which could include the use of a Smart Card or a software approach. Smart Cards can be used in a reader attached to a home computer to transmit digital cash to a merchant on the Internet.

- Banks are also considering software approaches such as that of Digicash Inc., which can transmit digital cash to the hard drive of a consumer's PC. The consumer can then transmit the digital cash to a merchant on the Internet.

Banks point out that electronic payments can be made through the ACH system if they conform to standards and the payee has made arrangements to accept electronic credits at a bank. Companies that deliver electronic payments, such as Checkfree or Intuit, can make use of that means of payment. Although a number of merchants are not ready to accept electronic payment and many payers do not provide enough detail to make an electronic payment possible, the ability to make electronic payments by this means is improving.

Credit card organizations can also deliver electronic payment through their exchanges. This provides them the ability to make electronic payments to merchant accounts on their networks if they are running home banking systems. Credit cards provide banks the ability to debit the accounts of card holders directly for such payments.

Debit cards and ATMs offer the means for individuals to withdraw money electronically from their bank accounts for payment.

Smart Cards offer a means for merchants to receive electronic payments from individuals, which could have benefits for banks as well as merchants and consumers, but individuals and merchants must sign up for the services.

- The use of a Smart Card to take the place of pocket change is attractive to banks because it can reduce branch office activity, but it requires a development effort for the systems involved, as well as ATMs or other means of updating the Smart Cards.
- There have been questions about the willingness of bank depositors and merchants to use a Smart Card system and pay fees, which are being tested by pilots.

An important pilot for testing the attractiveness of stored-value Smart Cards, sponsored by Chase, Citibank, Visa, and MasterCard, will start in an area of New York City in the fourth quarter of 1996. Fees will probably not be charged, initially. The Federal Reserve will not subject the application to regulations that might inhibit Smart Card use because the stored value will be less than \$100 or less.

The card organizations, Visa, Eurocard, and MasterCard, have developed a standard for stored value, EMV, which can be audited, and Citicorp is also developing a standard, EMS, which can be audited. The systems of the card organizations may be more appealing to banks than Mondex. In a recent

test, however, a Mondex reader was used to read other stored value cards. This demonstrated interoperability.

The Mondex system allows stored-value information to pass from one card to another or to a device at a store (or even in a taxi cab) without disclosing where the stored value or electronic money came from. The recipient could pass the money on without disclosing that it had been in his account. This is a nonaccountable system that could raise settlement issues, according to several banks. However, a group of banks expressed interest in Mondex due to its flexibility in handling stored value and transmission of value.

Most banks report that they will not try to develop unique systems for electronic payment or digital cash. They will cooperate with vendors and large banks that launch services and products if their customers request it and costs can be covered.

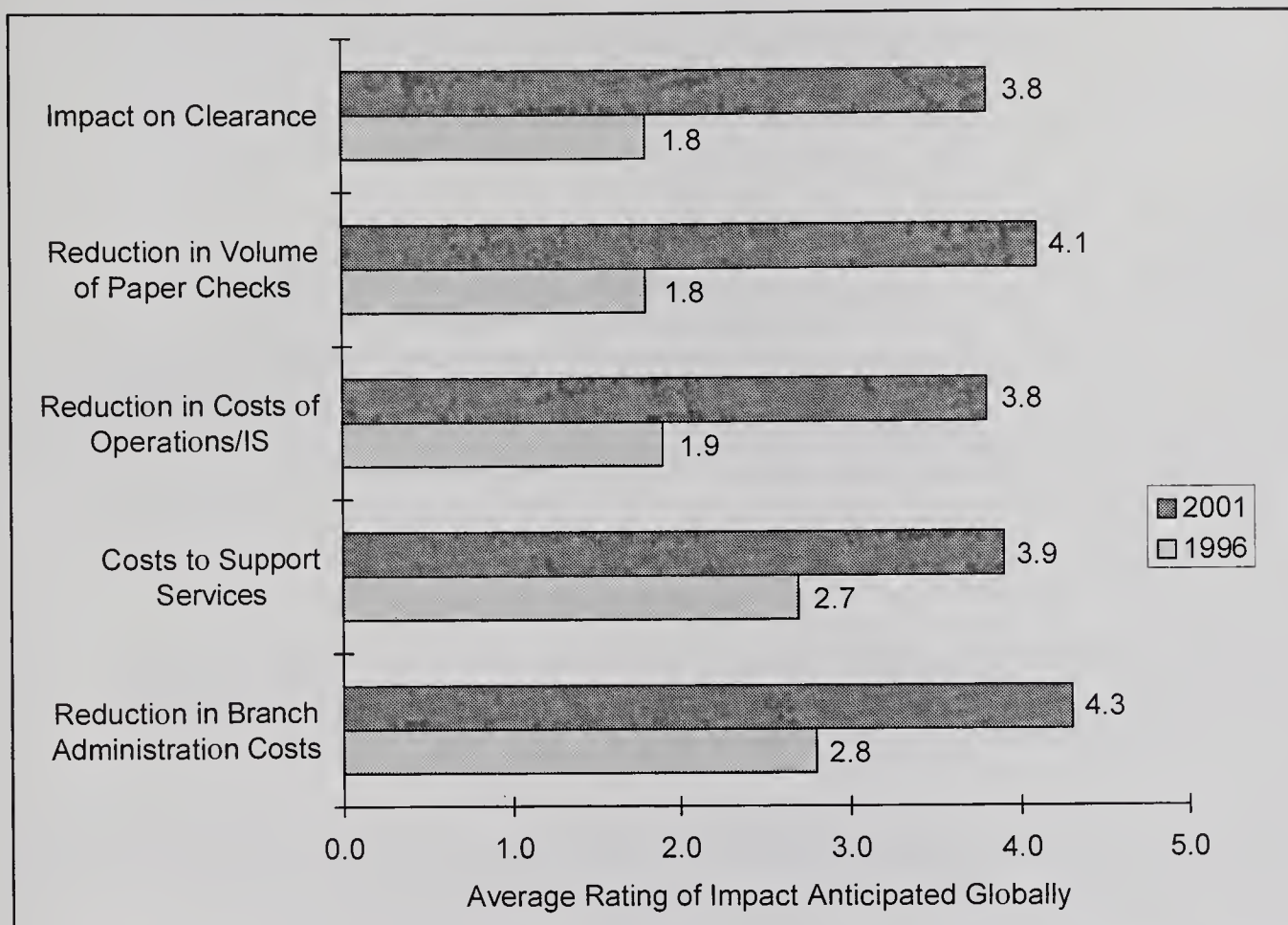
The next global banking report of the Internet will analyze present and planned approaches for financial transactions on the Internet.

5. Impact on Banking Operations/Administration

In addition to the impact on revenues and competitiveness discussed earlier in this chapter, banks anticipate major impacts on bank operations and administration from the use of retail electronic banking, as illustrated in Exhibit II-12.

Exhibit II-12

Anticipated Impact on Banking Operations/Administration from Retail Electronic Services



1 = Low and 5 = High

Source: INPUT

In addition to these changes, retail electronic banking will also have a major impact on the use of technology in banks. The outstanding example of this will be the increasing use of the Internet, but there will also be notable changes to support in Smart Card, debit card, and credit card applications as a result of the use of cards with chips, advanced ATMs, and other technology.

- Banks will be forced to plan for the introduction of technology such as Smart Cards and kiosks. It will be difficult to react immediately to customer demands or competitive announcements without planning or the use of vendor aid.
- Without planning and research, some banks can also find that they have embarked on steps that may soon be obsolete.

6. Use of Nonbank Financial Services

Many banks are concerned about the use of retail electronic banking services by nonbanks to capture a share of banking business. Nonbanks are already strong competitors for lending, investment, credit card, and other business. Retail electronic banking services could be used by nonbanks to develop better relationships with prospects and clients, as illustrated by Exhibit II-13.

Exhibit II-13

Competition From Nonbanks for Retail Electronic Banking Services

Retail Service or Product	Competition From Nonbanks as Reported by Banks
Home Banking	Expanded CMA accounts and use of PFS by brokerages, Offering of home banking by network services and communication firms
ATM, Advanced ATM, Kiosk	Alliances between vendors and banks; vendor services offered through an acquired bank
Smart Card	Vendor products sold through banks and other financial institutions
Credit Card	Cards from private-label companies and nonbank financial services vendors
Debit Card	Cards including multifunction cards from nonbank financial services vendors
Computer Based Telephone Service	Banks and nonbank competitors utilize vendor services to compete
Internet Based Services	Nonbanks and vendors sell lending, mortgage, and investment business as well as retail banking services

Source: INPUT

Certain services, such as home banking and Internet services, can be used by nonbanks to obtain lending, credit card, and investment business.

However, banks can put together a more extensive combination of products, including computer-based telephone services that handle payment, transfers, and other needs in a seamless method with home banking and other internal systems. Nonbanks could find it difficult to compete with a large, well-planned set of retail services, but many banks might not go far enough in their developments to protect their business or capture new retail business such as financial planning.

- Banks must take advantage of newer PC technology and better personal financial software (PFS) products, particularly the more flexible and user-friendly products. The use of simpler Internet products (appliances) for home banking must also be explored.
- Banks must take advantage of the Internet to attract or hold customers as well as to take advantage of low-cost means of obtaining or supplying data or attracting services.

7. Opportunities for IT Vendors

Because the use of retail electronic banking services involves the use of new and rapidly changing technology, vendors of information services have been used to a greater extent than for most other banking and financial applications.

- Global expenditures for software products utilized for retail electronic banking services will increase from approximately \$820 million in 1996 to \$4.6 billion in 2001.
- Expenditures for professional services, SI, outsourcing, and network services will increase from approximately \$610 million to \$10.5 billion.

In place of vendors, banks may use software and services from other banks or banking organizations to aid them. The qualifications of firms that will be used for retail electronic banking assignments are shown in Exhibit II-14.

Exhibit II-14

Reasons for Using Vendors or Other Organizations to Aid with Retail Electronic Banking Services

Aid Needed to Implement or Support Retail Electronic Services	Average Rating in Non-North American Regions		Average Rating in North America	
	1996	2001	1996	2001
Knowledge of new technology like advanced ATMs/kiosks, smart cards or digital cash	2.8	3.2	2.9	3.8
In-depth experience in banking	1.8	3.1	2.0	3.5
Experience in implementing new banking technology	2.2	2.4	2.0	2.3
Experience in retail service or product involved like card issuance or ATM networks	2.1	3.9	2.2	4.1
Banks or vendors who have developed specific systems or software for new retail electronic banking services	3.3	3.8	3.5	3.9
Want to use vendors with general capabilities such as SI, network services or outsourcing	2.0	2.3	2.1	2.2

1 = Low and 5 = High

Source: INPUT

C

Conclusions and Recommendations

1. Conclusions

The opportunities that retail electronic banking provides to banks are not confined to the benefits of individual services; this is illustrated in Exhibit II-15.

Exhibit II-15

Conclusions: Opportunities Available to Banks

Opportunities That Retail Electronic Banking Service Makes Available to Banks	Relative Payback from Opportunities in 2001
Use an integrated set of retail electronic services to guide or control the financial business of retail bank customers: Sell lending, mortgage, investment products including mutual funds, insurance, personal trust, via the Internet	Estimated that \$300 billion in banking industry revenues could be driven by these services Could add 25% or more to total revenues of a bank
Meet customer demands and gain benefits from a set of retail electronic banking services (home banking, ATM, credit/Debit cards, computer-based telephone)	Could Add 10-15% to Bank Revenues Could be necessary to maintain business
Act as an entrepreneur or vendor in relation to smart cards, electronic money, payment on the Internet or other electronic financial services	Could generate new streams of revenue that could be substantial for vendors

Source: INPUT

The major opportunity that retail electronic services will provide is the opportunity to influence or guide the financial activities of consumers, their use of lending or mortgage vehicles, and their selection of savings, investment, and insurance products.

Retail electronic banking will provide individuals with the ability to carry on seamless contact with a bank for bill paying, balance transfers, access to money, and investment and insurance selection from home or portable computers, ATMs, kiosks, computer-based telephone services, and the Internet.

- An individual will be able to initiate banking transactions more rapidly and from more convenient locations.
- The results of balance transfers and payments from a home computer will be available from a phone agent, PC or ATM, or a kiosk screen.

It will be to an individual's advantage to have an electronic relationship with a bank.

Most banks now feel that the major reason for implementing retail electronic banking services is to satisfy the demands of customers who are important retail customers. Revenues, cost savings, and competitive moves to gain or hold accounts are also reported to be important, particularly to some larger banks.

A number of banks do realize the potential for account control that retail electronic banking will bring about (for example, small banks like Glenview State Bank in Illinois), but many are not taking steps to make sure that these services will pay for themselves or achieve hard benefits.

Not all banks are planning the growth or evolution of a set of retail electronic services that will enable them to capitalize on the future potential of these offerings.

Changes will take place in the use of retail electronic banking services.

In home banking, additional vendors and possibly banks will develop network processing capabilities that support home banking users. There will also be changes in PFS, including the development of systems that are easier to use that incorporate graphics and game-like features (over six PFSs are now in use).

New types of multifunction ATMs and kiosks will be developed that can be used more easily in markets, stores, office buildings, and outside locations.

The success of credit and debit card issuers will be more dependent upon inclusion of the card in the set of retail electronic products used by individual banks or a group of banks. Use of cards or other retail electronic banking services with other units of the set will carry automatic incentives and benefits.

Cards with credit, debit, and stored-value capabilities will allow users to call upon a credit line when there isn't enough money to support debit and stored-value transactions.

Computer-based telephone services will have more sophisticated software available to enable phone agents to serve customers better and bring more bank products to their attention.

The Internet will be used by almost all banks to deliver retail electronic banking services and communicate with customers.

The software supporting financial products and services on the Internet will enable users to call upon multiple services in a seamless fashion so that financial alternatives can be evaluated, analyzed, and selected by users.

Banks will provide multiple payment methods for use of the Internet that involve payment through bank networks or with electronic money. This capability will be part of a bank's standard activities in support of merchants and depositors. A small number of banks, including Wells Fargo and NatWest, will act as vendors providing the software products or processing/outsourcing services that support electronic money or payment methods. There will also be payment services for the Internet provided by vendors including Visa, MasterCard, Cybercash, and Mondex.

Banks will compete with network services firms, processors, and software product developers in offering electronic payment methods via a Smart Card, networks, or the Internet. Most banks will not offer these services, and they will utilize vendors or other banks such as NatWest or Citibank, for Internet payment services.

Further detail on processing financial transactions on the Internet will be addressed in INPUT's next Global Banking study. Use of Smart Cards and other cards in retail shopping, as well as orders between companies and buyers, individuals or other companies, is covered in more detail in INPUT reports dealing with electronic commerce. The settlement of electronic items from a bank's standpoint is discussed briefly in Chapter III.

This report is focused on retail electronic banking services, including use of the Internet to deliver these services or make payment, and the extent to which these services will generate or control revenues, cost savings, new accounts, and other aspects of banking business.

2. Recommendations for Banks

Banks must develop a plan for the use of retail electronic banking services. The plan must address which of these services will be developed and when they will be introduced.

- The plan must address home banking, ATMs, and credit and debit cards, since these services and products are expected by many depositors.

- The plan should address a computer-based telephone service, since this helps to support and integrate other retail services and provides an opportunity to sell additional business.
- The plan should also address Smart Cards and advanced ATM units or kiosks, since they will become increasingly important to consumers.
- The plan must address means of selling banking and financial services on the Internet, since this service not only offers an opportunity to sell lending, mortgage, investment, and other services, but it also provides a means of attracting customers to a bank.

Bank plans should review the benefits that specific services can produce to ensure that a payback in revenues, costs, and additional business justifies investments and operating costs. Some banks are justifying retail electronic banking services based on the business they will save.

Because of the rapid pace of development and change in these services, banks should not rely on limited research, newsletters, or the advice of vendors in planning the development of these services. Research should be carried out that identifies the most recent developments, whether they are in Australia, Belgium, Japan, or the U.S. Some bank contacts report that they implemented technology late in its life cycle.

Banks should examine opportunities to use retail electronic banking services as a means of guiding or controlling the financial business of an individual. Research on the activities of selected banks could help to achieve this end.

Banks should not consider steps to compete with vendors in developing a Smart Card concept or the means of establishing an electronic money product unless substantial research is planned on the subject.

3. Recommendations for Banking Vendors

Vendors serving the banking market should examine what is taking place with retail electronic banking services. A number of vendors concentrate on a few product areas, such as credit and debit cards or ATM devices, but don't promote their knowledge and abilities to aid with home banking or Internet-based banking services.

Vendors should emphasize their knowledge and experience with retail electronic banking services because this is the most important factor in the selection of vendors for aid. General banking experience will not be enough to attract banks, in most cases.

Vendors must ensure that they have knowledge of developments in their areas of expertise. Banks report that they have been offered older approaches and technology by leading vendors.

Vendors should examine what is involved in retail electronic banking services because many of their skills might be applicable to bank needs.

- Vendor knowledge of help desks and procedures would be useful for customers using home banking, Smart Cards, or Internet-based services.
- Experience in changing technology and procedures rapidly while maintaining capabilities for customers is also a capability that vendors could offer banks in relation to electronic banking services.

Vendors should anticipate or perform research on the impact of changes such as the use of electronic money, the emergence of multifunction cards or the deployment of kiosks or banking services in markets. There will be opportunities for processing and outsourcing retail electronic banking services, as well as aiding banks with development of electronic services.

(BLANK)



Retail Electronic Banking Market in the U.S.

A

Home Banking

1. Overview

According to bank respondents, home banking has become the application that is most representative of retail electronic banking. However, articles in popular as well as financial and bank publications refer to banking activities conducted by depositors from their home (or portable PC) as home banking, on-line banking, automatic bill paying, and other names. All these systems will be referred to as home banking, although there are differences in the systems being offered:

- Most banks that supply home banking services supply balance information on accounts and the ability to transfer funds between accounts.
- Home banking systems may also supply detail for transactions (check numbers and amounts of checks that have been written outside of the home banking system). The transaction detail may be supplied just for the current month or for several months.
- Home banking systems generally offer the ability to pay bills for payees that have been identified with a code. If a utility has been identified as code 23, that code can be entered from home with an amount to be paid. This capability can be implemented from a terminal or a computer, but most banks are moving to a PC to take advantage of the interactive graphics and personal financial management systems (PFS) that a computer can offer.

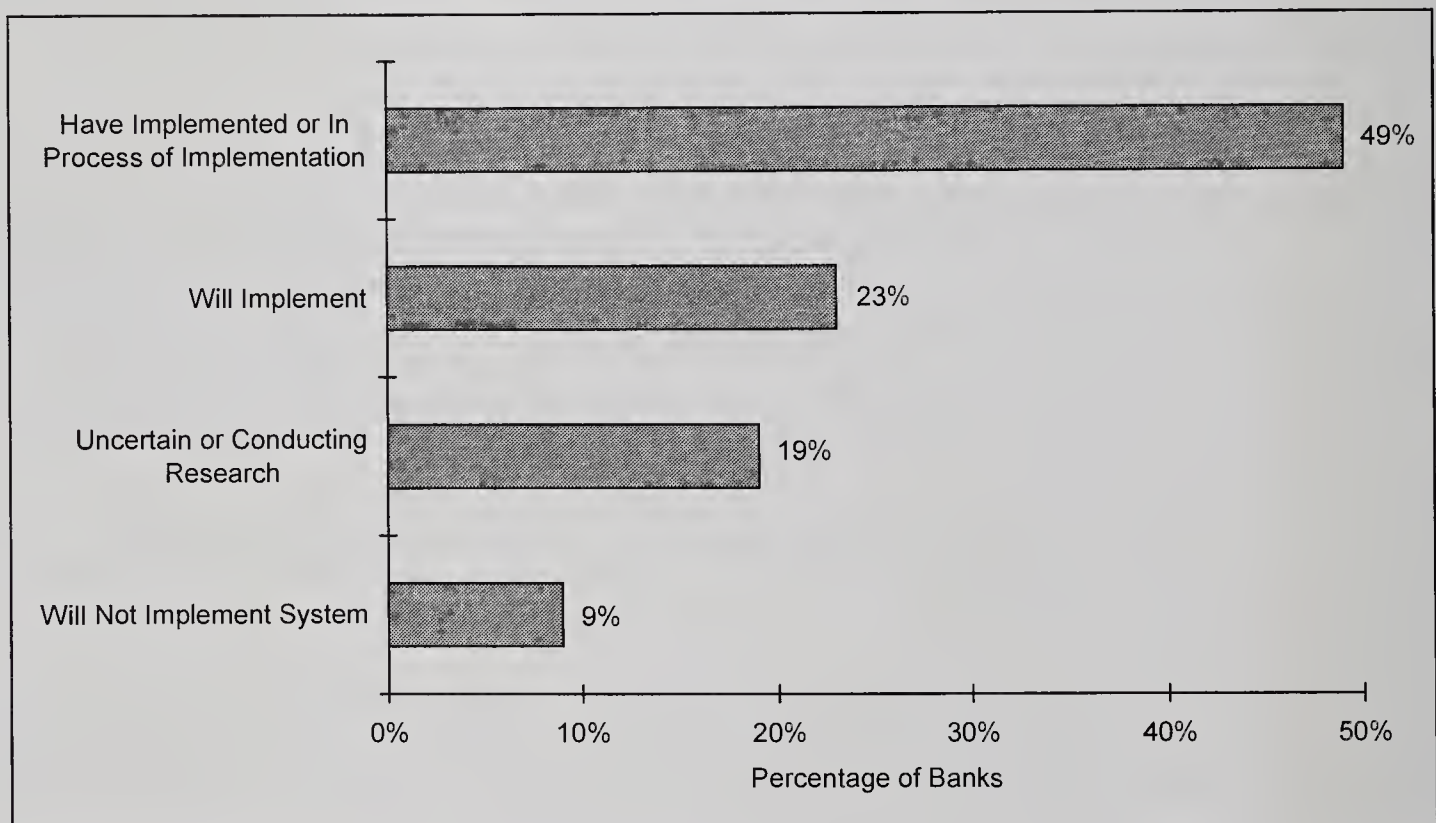
- Only a small percentage of banks now offer the ability to enter the date when a bill should be paid, but this will increase. Some banks also allow recurring (or preauthorized) payments to be entered from home, but others require the depositor to do this at a branch.

A number of banks and depositors feel that home banking services should refer to systems that let bank customers use a PC with a PFS software product like Quicken, Money, or Managing Your Money to pay any bill.

There is a strong trend among banks to implement home banking services, as shown in Exhibit III-1. Most of these plans call for the use of PFS, bill paying and balance/detail information, but some banks report that they are considering a limited action just to support their image.

Exhibit III-1

Present and Planned Use of Home Banking



1 = Low and 5 = High

Source: INPUT

Several banks that report being uncertain indicated that they would probably use home banking systems offered by larger banks or vendors. One community bank that made a point of not planning to implement a system said it would respond to competition by piggybacking on the system of a nearby larger bank. This is a strong trend in home banking services.

Many of the banks that report that they have or will have home banking systems took action in early 1996 or will start to take action later in this year.

- About 43% of respondents referred to planned action in 1996, and a few mentioned action in 1997.
- Less than 5% plan to delay acting on home banking beyond 1997.
- A close investigation of the stage of system implementation of home banking and plans reported to INPUT led to an adjustment of the percentage of banks that will have operational home banking systems by the end of 1996. INPUT estimates that percentage to be 28%.

2. Trends, Drivers, and Inhibitors

a. Trends in Home Banking Systems

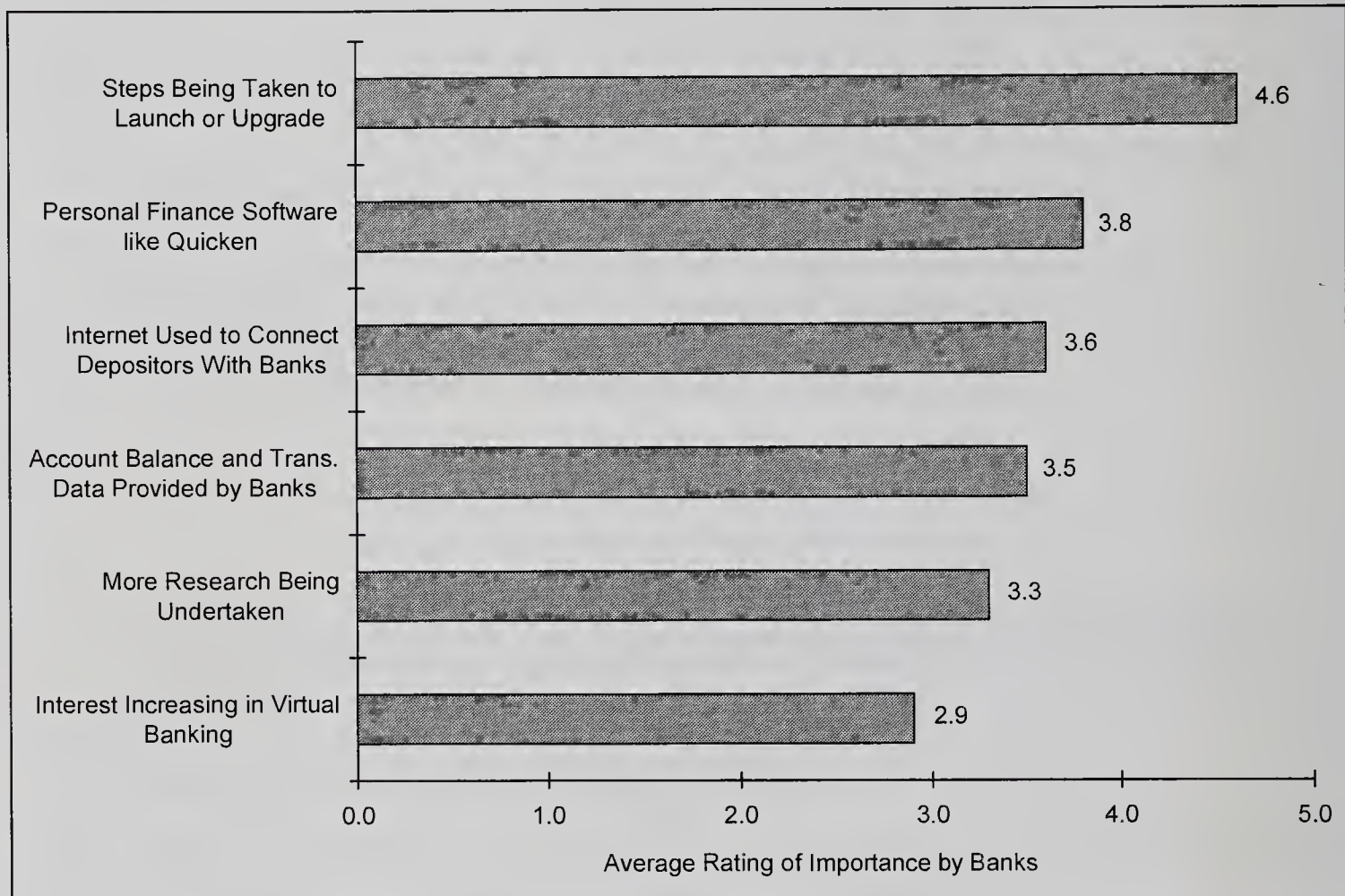
As shown in the previous section, the outstanding trend in home banking for banks at the present time is to get on board, to have some type of home banking system or plan. EDS is working with a service bureau in Connecticut to provide credit unions with the opportunity to offer home banking. The Banker's Bank in Illinois announced that it would aid 300 community banks which it has relations to launch home banking systems.

- The trend shows sign of being intense over a short period of time. Many of the banks reporting that they have or will have home banking systems took action in early 1996 or will take action later in this year, as noted above.
- Several banking vendors believe that the flurry of activity to get started with home banking will be succeeded by a trend to upgrade home banking systems.

As illustrated in Exhibit III-2, other trends reported in relation to home banking emphasize capabilities that could be offered with home banking. These include support of personal finance software products (PFS) such as Quicken and Money (there are now more than six PFSs in use) and use of the Internet to connect users and banks or advertise the features available with home banking. (EDS announced in early 1996 that it would set up 3,000 Web sites for banks that request the service.)

Exhibit III-2

Trends in Use of Home Banking



1 = Low and 5 = High

Source: INPUT

Although banks are interested in additional research on features desired by depositors and what types of systems are being implemented by other banks, as indicated in Exhibit III-2, many are planning or taking action before research is complete. Several banks raised questions about the strong interest in home banking at this time and wondered what forces are driving the use of home banking so strongly.

Future developments that should be anticipated or that are beginning to appear, although they are not recognized as trends, include:

- Banks will develop means of tailoring the use of home banking systems to the needs of groups of users such as those who invest with the bank.
- Interactive, graphic packages with game like features will be utilized for home banking by some banks to attract customers. These products will be capable of interfacing to PFS systems and helping customers to follow procedures. Several vendors that specialize in graphic presentation are discussing this type of system with banks.

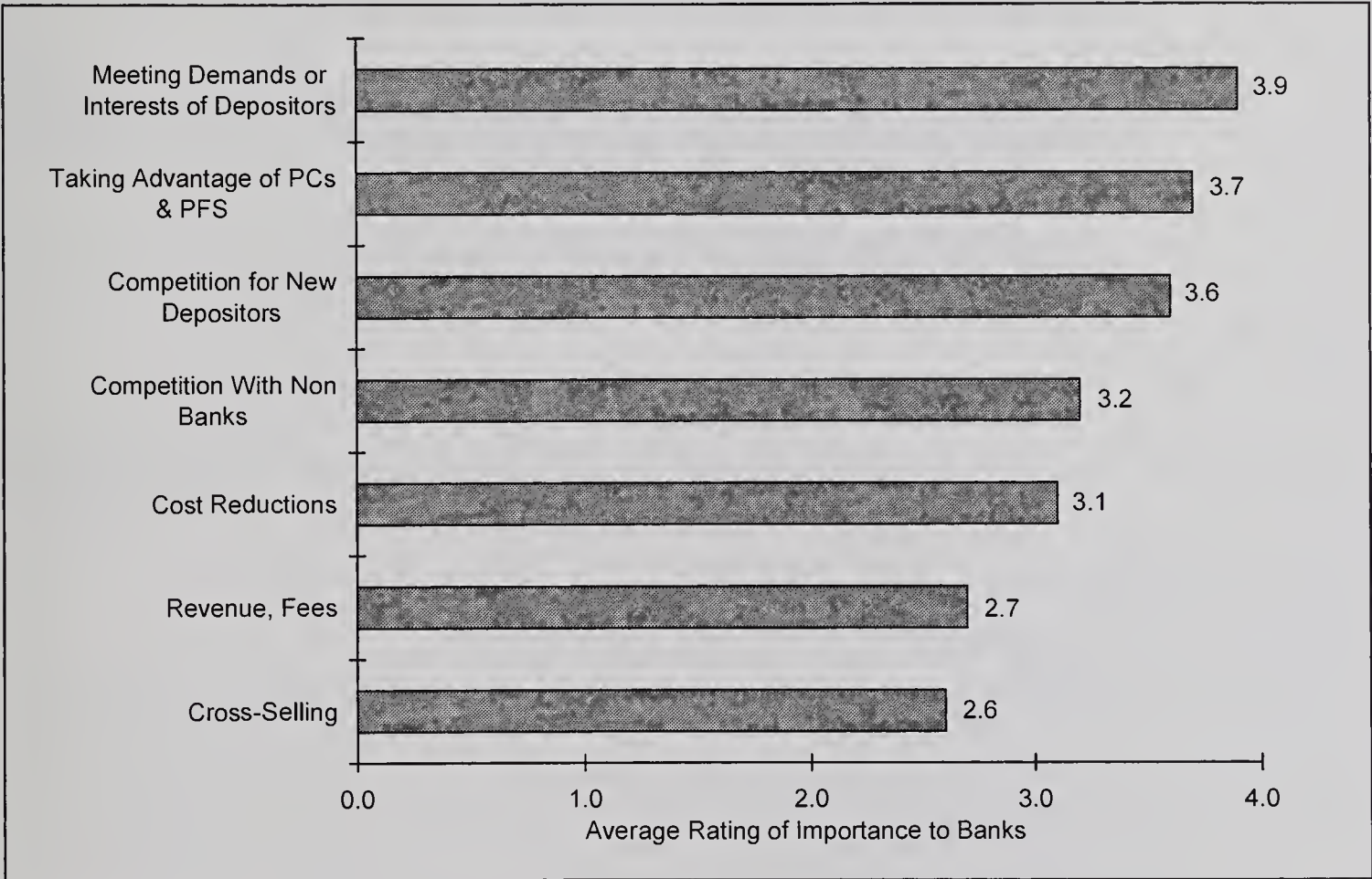
- Interactive TV is being introduced or planned by credit unions and smaller banks as an economical approach to home banking.

b. Market Drivers for Home Banking

Although banks mention business considerations such as reduction in branch costs and increases in services and fees, the prime motivation for offering home banking is reported to be meeting the demands or interests of depositors and making use of new technology, as illustrated in Exhibit III-3.

Exhibit III-3

Factors Driving Home Banking Initiatives



1 = Low and 5 = High

Source: INPUT

A number of bankers report that they have been impressed with two recent occurrences:

- The number of articles in major business and popular publications indicating the rising interest in using personal finance software (PFS) together with home banking. PFS is a major driver in the U.S., much more important than it is elsewhere in the world.

- The requests or demands of a vocal group of depositors who want the bank to support this type of service. Many of these depositors have meaningful deposits and business at their banks.

Bankers report that a home banking service can offer opportunities to reduce branch activity and costs as well as gain more fees and/or sell other business, but the most powerful drivers are the pressures from present clients to use home banking with a PFS and the possibility of using the service to gain new accounts.

However, some major banks with plans for large-scale home banking systems report that the possibility of lowering branch costs is the major reason for these systems.

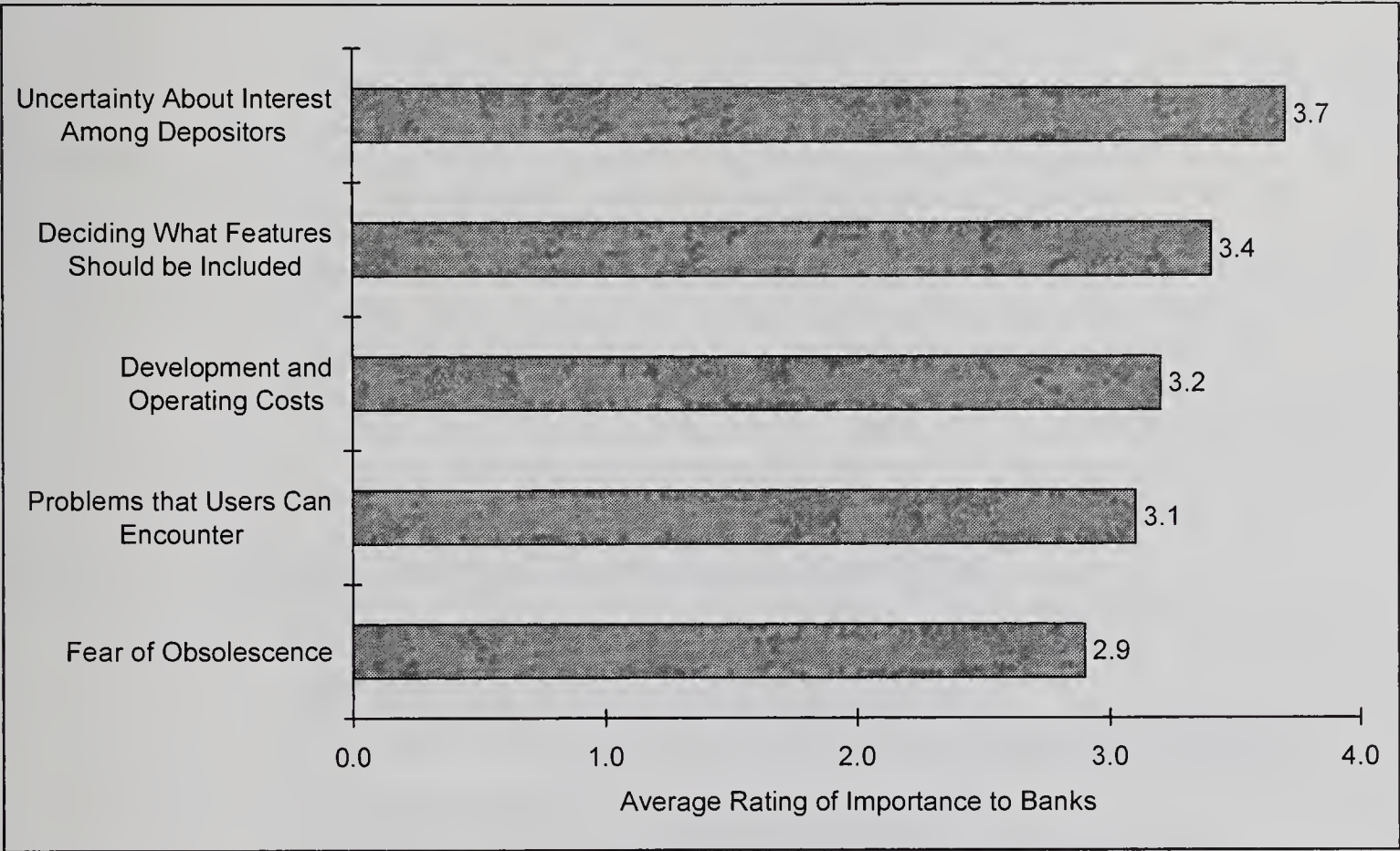
- Citibank's retail reengineering plans call for simultaneous reduction in staffed branch locations and costs and increased use of ATM and home banking services to take the place of branch services. Citibank has recently lowered fees to encourage the use of electronic banking.
- Wells Fargo has also combined closing of branches with offering electronic banking services as well as service in supermarkets.
- One other large bank reports that the possibility of extending its geographical coverage while lowering the costs of serving depositors is its most important consideration. This bank does agree, however, that most banks are driven to offer home banking due to the interest of depositors in the service.

c. Market Inhibitors for Home Banking

Banks do express concerns about home banking that could inhibit their use of the product. One of the leading factors that could inhibit launching the product is the extent to which interest is present among depositors. Would enough sign up to make the service profitable or break even? This factor, as well as the selection or evaluation of features that will be needed and the costs that may be involved, can inhibit launching the service, as shown in Exhibit III-4.

Exhibit III-4

Factors Inhibiting Use of Home Banking



1 = Low and 5 = High

Source: INPUT

Deciding what features to include was reported to be a complicated issue for over 50% of banks. Several bank officers stated that original home banking plans had gotten started by offering payment just for recurring items such as mortgage, insurance, or utility payments, together with balance inquiries and transfers. After limited research, they discovered that depositors wanted the ability to handle more payments through the system, as well as to use the PFSs that have become popular in the media and are given away in some of the computer system packages now being sold at retail stores.

Several banks noted that research on what other banks offer revealed that competitive banks are linking (or planning to link) services to home banking such as getting information on equity prices and initiating purchases (this is already being done by a small number of banks). Banks are also building links between home banking, pay by phone and ATM devices, as well as banking services offered on the Internet. Banks report that decision making on what to include in home banking offerings could delay or inhibit their actions.

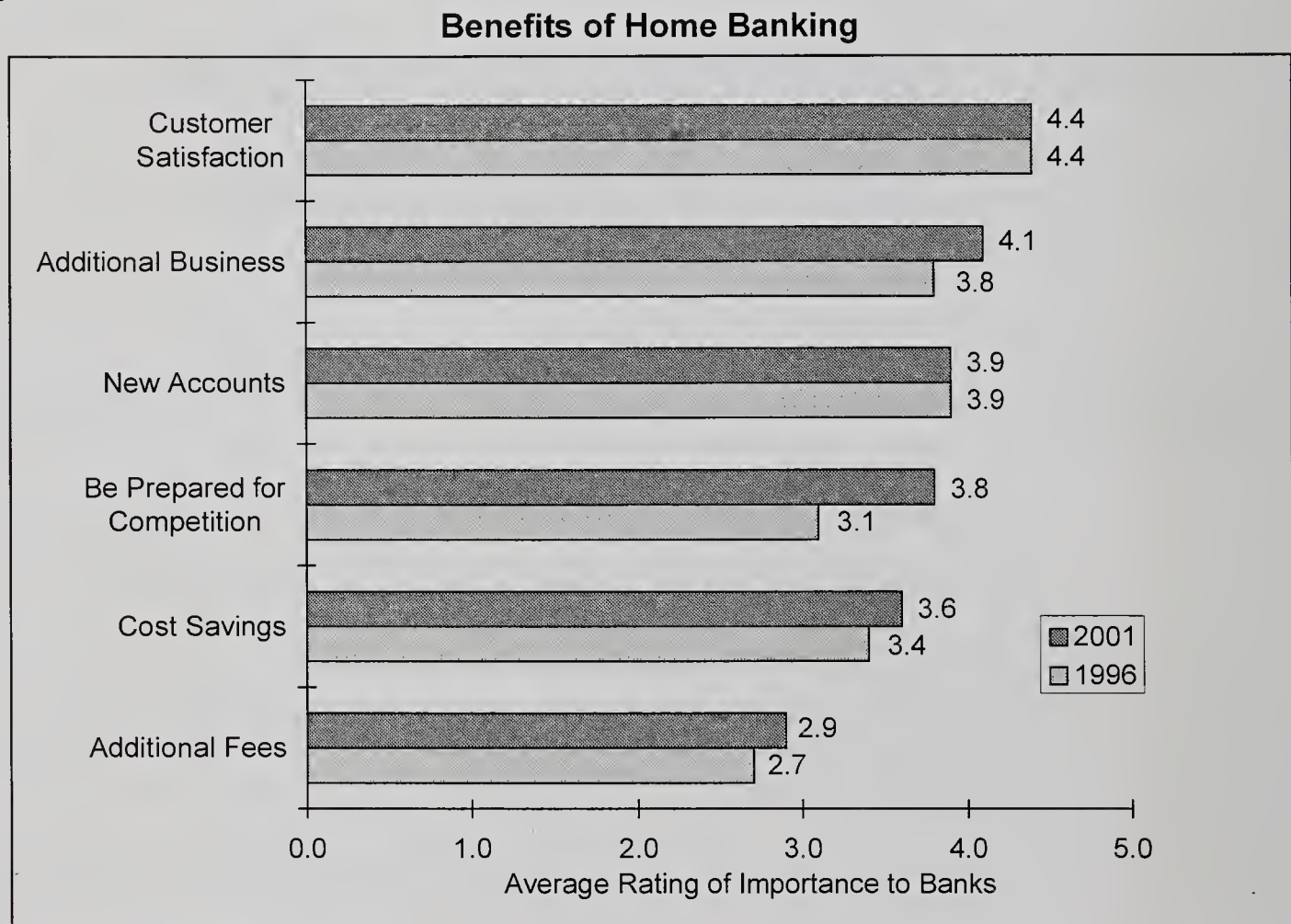
The time and cost of developing home banking and the problems that users can encounter are additional deterrents, particularly if a bank is concerned

about the extent of the services that will be involved. Retail banking and IS groups also feel that the possibility of installing a system that will be obsolete shortly is a definite deterrent.

3. Analysis of Home Banking Benefits

Despite the concerns about home banking offerings, the benefits that banks feel they can achieve are encouraging use. According to many bank respondents, these benefits have to be considered in relation to two points in time: the present moment and about five years in the future. Some of the benefits that can be achieved will change noticeably over a period of time, according to banks, and as illustrated in Exhibit III-5.

Exhibit III-5



Source: INPUT

Although the ability to increase customer satisfaction or gain new accounts is expected to remain about the same, the ability to gain additional business and generate cost savings and additional fees or revenue rises.

- Some banks mention a defensive type of benefit. They feel that home banking becomes increasingly necessary to face competition.

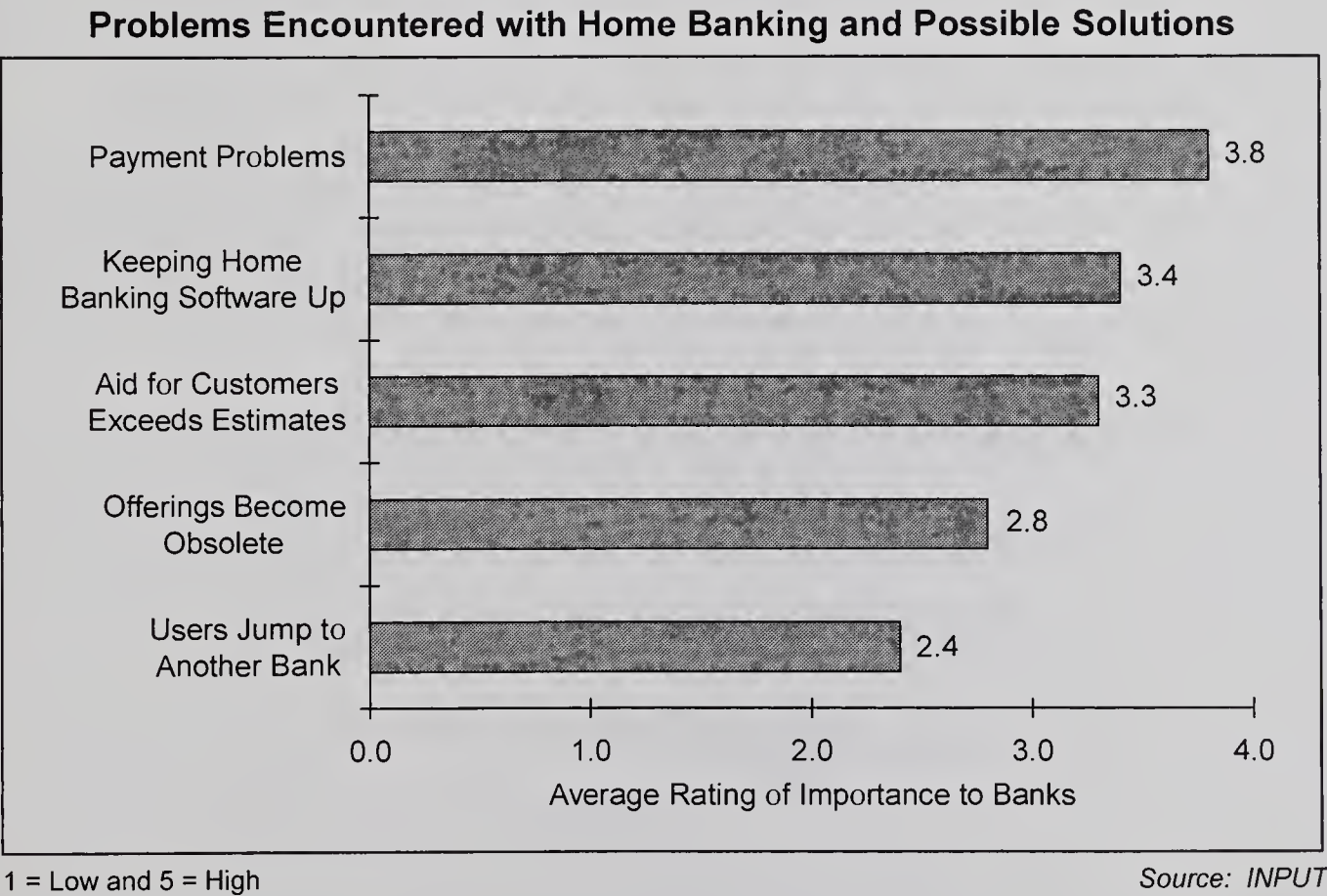
- Banks without home banking report that customer satisfaction would suffer greatly if home banking were not offered in the next five years.

Several banks noted another, related consideration. If an effort is not made to launch a home banking initiative, it may be extremely difficult or costly to launch in five years.

4. Possible Problems and Solutions

The most common problem reported at present is the difficulty many bank depositors experience when using home banking or on-line software to pay bills. Articles appear regularly in technical magazines and popular magazines as well as respected newspapers such as the *New York Times* and the *Wall Street Journal* detailing the problems encountered by bank clients. This is the problem rated as most important by banks themselves, as noted in Exhibit III-6.

Exhibit III-6



One problem mentioned by depositors is that payments may not be made rapidly after instructions input to the bank. That may be because many bill payments are not made electronically.

- Checkfree, which handles check payment for some home banking activity, and Intuit, which handles payment for customers using its product, Quicken, cannot send payments electronically to many merchants or other payees.
- Checks must be printed and mailed in situations where the merchant or payee has not arranged to receive payment electronically, and it can result in delays in making payment. Most banks and merchants expect this situation to improve over time as more payments are made electronically.

There are also problems that a depositor can experience in initiating a request for payment, whether the payment is made electronically or with paper.

- There are difficulties and delays due to the volume of message traffic on the network utilized at some times and/or some locations. The need for a home banking user to complete a security check with a bank and to download bank data may be difficult to accomplish at times of heavy volume.
- The bank may compound the problem of dealing with heavy traffic or overcoming problems in making bill payments by referring callers to the hotline for the home banking software provider. One large bank that is known for its home banking offering has been discussed in newspaper stories regarding its practice of referring depositors to the software hotline.

Several banks reported that it is necessary for a bank to learn something about the home banking software so that the staff can provide aid for the most commonly encountered problems. An additional approach for aiding home banking clients that is being used by a small number of banks is to provide computer-based telephone services ("First Direct") as a supplement to home banking.

- This enables clients having trouble with home banking to revert easily to a back-up service.
- Using the "First Direct" type of service to help with home banking problems can provide an opportunity for experienced bank telemarketing/support personnel to build a relationship and sell other services. (See section III-E.)

One large bank with an aggressive approach to home banking feels that an allied problem is the amount of contact time or service that can be required by customers.

- This bank reports that a study of home banking customers revealed that some can't be weaned from going to branch offices. They will periodically visit the branch and wait to talk to platform officers if tellers are busy.
- Other home banking users access balance data or information available on the home banking system much more than is needed, according to this bank.

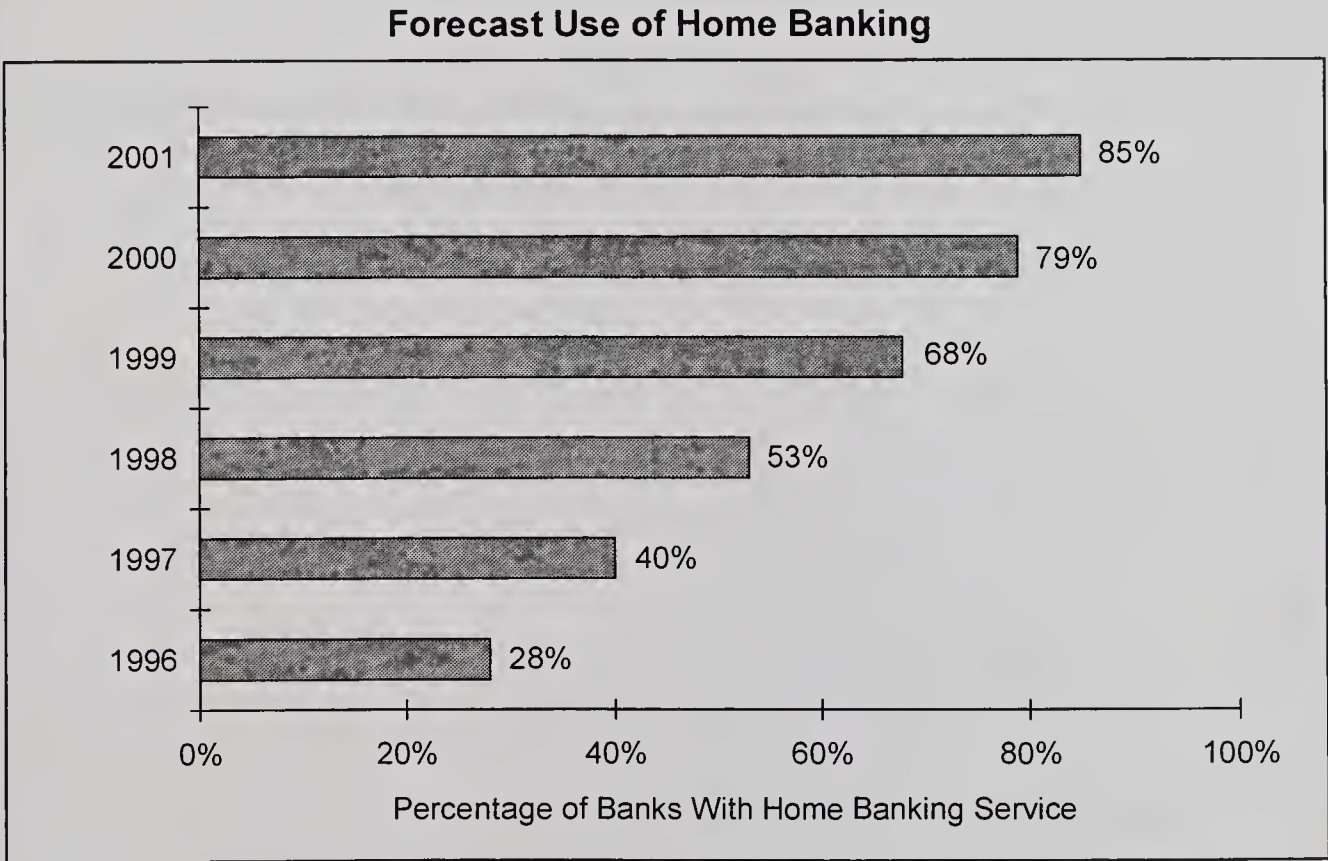
This bank has concluded that a program of phone contact similar to a "First Direct" type of service can reduce trips to the branch and/or excess use of home banking as well as provides means of marketing additional services or switching credit card and other business to the bank.

Although most banks did not feel that the dangers of having an obsolete system or losing clients were significant problems at present, some banks pointed out that these problems would increase in the future.

5. Forecast Use of Home Banking, 1996-2001

About two million people utilized home banking at the beginning of 1996, and about one-fourth of banks offered it. The use of home banking is measured between 1996 and 2001 in terms of the percentage of banks offering such a product, as shown in Exhibit III-7.

Exhibit III-7



1 = Low and 5 = High

Source: INPUT

The percentage of commercial banks, thrifts, and credit unions using home banking will continue to grow, but the universe of these institutions is limited. There will be a decreasing rate of growth over time. There will also be a steady increase in the number of financial services institutions offering home banking, and the service will continue to change and be upgraded.

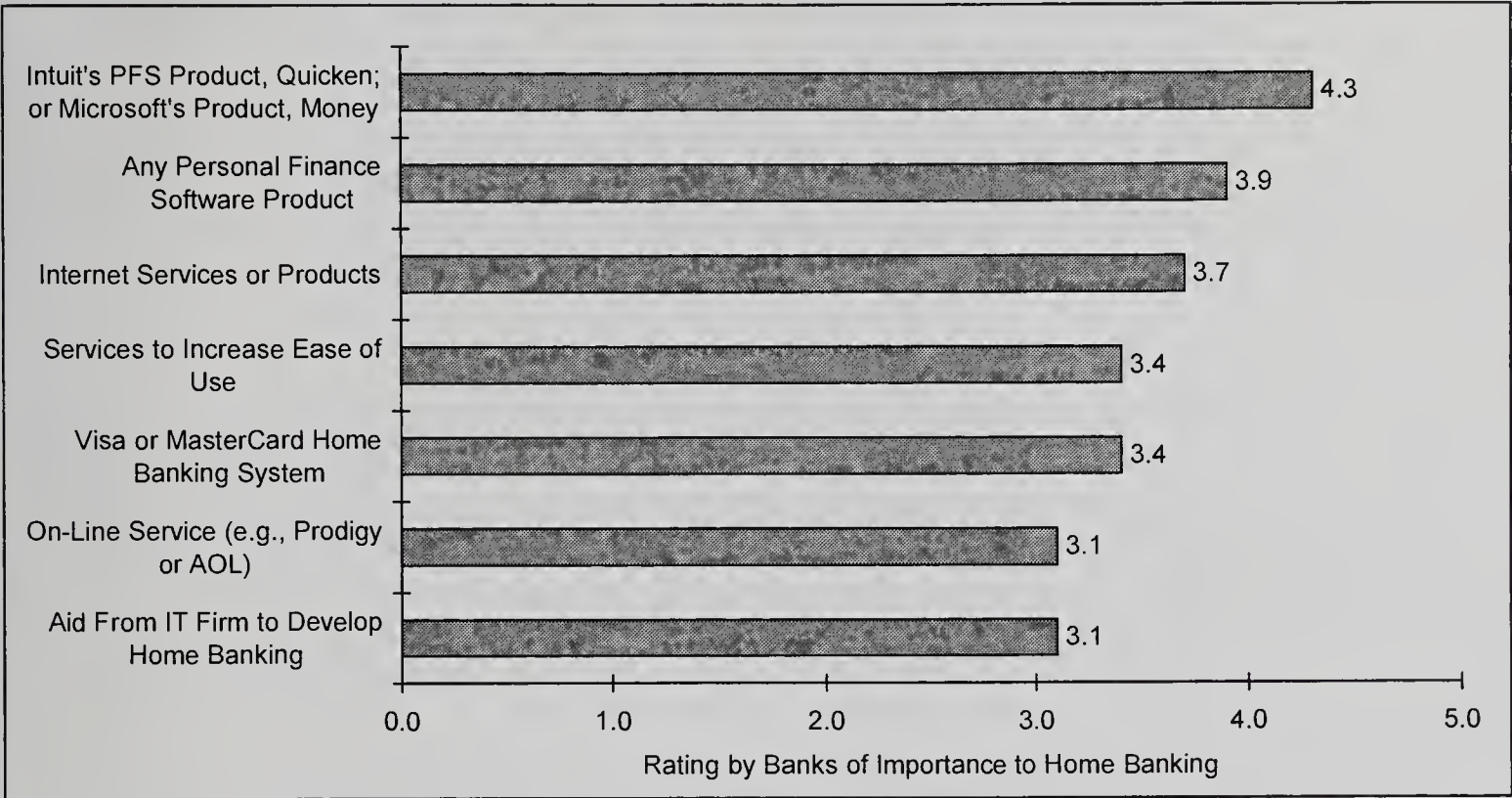
6. Importance of Vendor Products and Assistance

One of the primary factors involved with the use of home banking is the availability of personal financial software (PFS) products like Quicken, Money, and Managing Your Money. There are differences in these products, and vendors planning to use them must review them with other users to ensure that their goals in regard to ease of use or comprehensiveness of features are being met.

- This type of product can be recommended or even supplied by a bank as part of its home banking program. CoreStates, Chase, and Citibank have taken this step with Quicken and/or Money.
- Visa and MasterCard offer links to personal finance software as part of their home banking offerings.
- A subsidiary of Nations Bank and Bank of America acquired Meca Software, which owns the home banking software product, Meca. Royal Bank of Canada has just invested in Meca, also.
- Some banks report that interest in using personal finance products is of prime importance in making home banking feasible, as illustrated in Exhibit III-8.

Exhibit III-8

Importance of Vendor Products and Aid to Home Banking



1 = Low and 5 = High

Source: INPUT

The Internet is becoming very important to banks as a service that can help to support as well as promote home banking. It can be used as the means of connectivity between banks and bank customers, and it can also be used to connect bank customers to additional bank services (See Chapter V). Some banks have also noted that the Internet offers banks a less time-consuming and costly method of connecting clients to home banking services. Users may already know how to connect through the Internet or have contacts through the Internet who will help.

Banks point out that network providers (or on-line services) such as Prodigy or AOL can reduce the overhead of connecting and instructing clients. Visa and MasterCard can also offer assistance with this together with their home banking offerings. Both credit card organizations offer attractive sets of capabilities to banks that want to offer home banking.

- Visa and MasterCard both provide software that can handle bank functions together with private labeling capabilities allowing banks to incorporate their own names into the product.
- Both organizations provide use of their networks for bill paying and electronic payment capabilities.

Of most importance according to banks, both credit card organizations offer help in deciding what to incorporate into home banking offerings and experience in installing and implementing the service. As a result, both organizations have signed up a number of clients for their services.

One additional point of interest in the previous exhibit is the fact that through banks may be interested in assistance to implement home banking systems, this is not the highest ranking interest in relation to vendor products or services.

7. What About Virtual Banking?

Is virtual banking being offered? Security First Network Bank, the Internet-based service, added certificates of deposit, money market accounts, personal financial reports, computerized images of canceled checks, and new features such as joint checking to its electronic bill paying and automatic account reconciliation services in early 1996. It is referred to as a virtual bank in many publications. Some banks responding to this study point out that Security First does not offer a full set of retail lending services or service products such as collection or traveler's checks.

- It is an innovative, Internet-based bank with home banking services, according to these banks.
- Several other banks and the *American Banker* refer to Security First as an on-line bank, which may be more descriptive of its operations.

There are other banks with a high proportion of on-line services, as well as banks and vendors with plans for virtual operations. Several major banks commented that these banks will have to be reviewed in terms of their lending and deposit services by potential customers. Some may meet the needs of many depositors. Others may be limited in serving the needs of the present, but may meet the needs of future depositors more completely.

From the standpoint of 10% to 20% of depositors act as if virtual banking has arrived, according to bank respondents.

B

ATM and Advanced ATM**1. Overview of ATM Services**

Bank respondents tended to separate ATM services into basic offerings including cash dispensing and deposit taking, and advanced services including bill payment, inquiry on balances and transactions, transfers between accounts, data input for loan applications, and screen display for accessing information about bank services.

- Several banks stated that they were going to use a kiosk for these services rather than an advanced ATM.
- A small percentage of banks noted that they were going to use special “ATM-like” devices for certain types of personal loan business. Data including identification and credit information would be entered or referenced, and a loan would be approved and funds transferred to a checking account if desired.

A point that a number of bank respondents made is that banks must now decide not only to get ATM machines, but also what to do next with this technology.

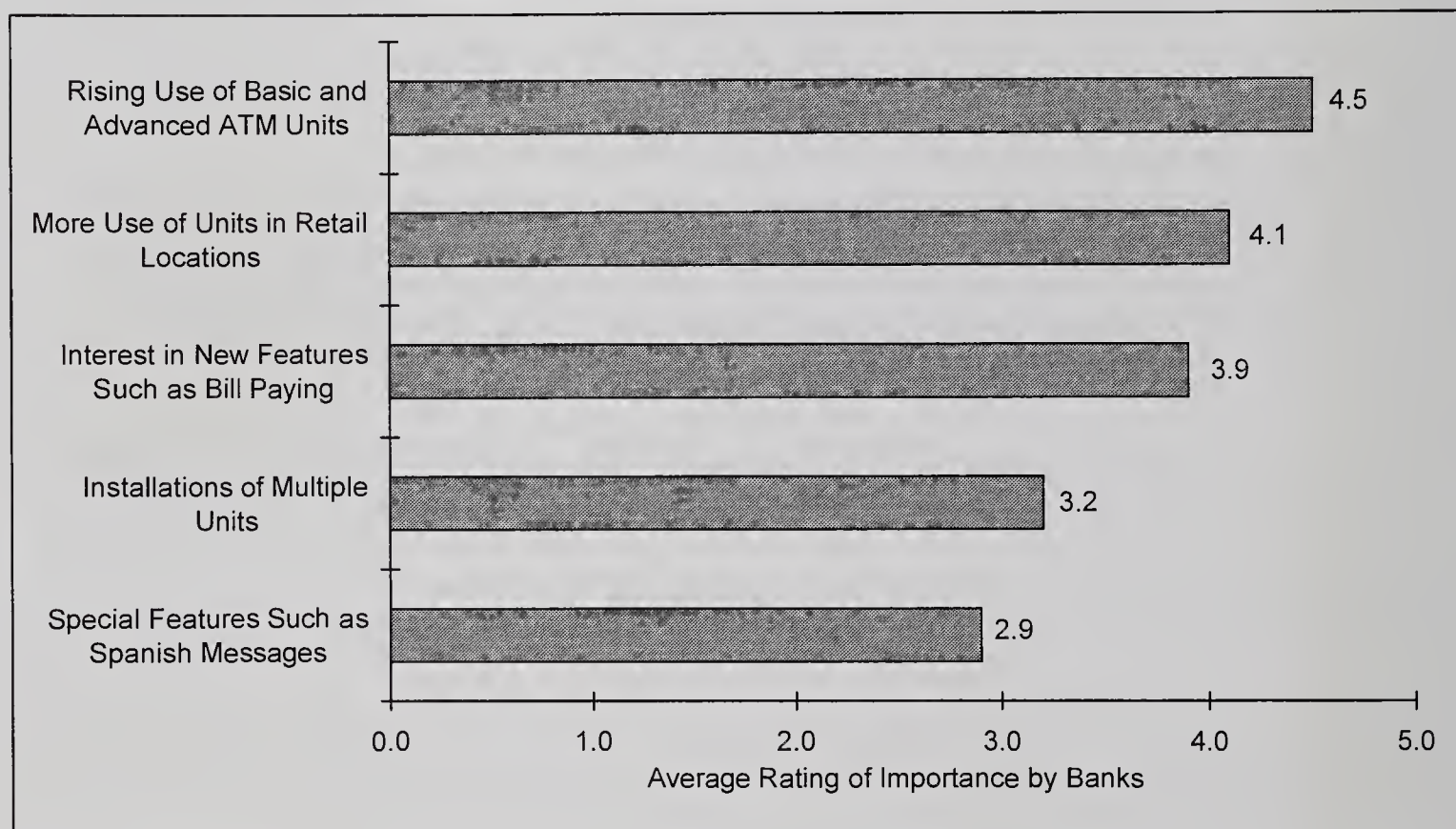
2. Trends, Driver and Inhibitors

a. Trends

According to bank respondents, use of basic capabilities with cash dispensing and deposit as well as advanced ATM capabilities such as bill payment and balance inquiry functions is rising, as shown in Exhibit III-9.

Exhibit III-9

Trends in ATM and Advanced ATM Units



1 = Low and 5 = High

Source: INPUT

Practically all bank respondents reported that ATM units that offered cash dispensing were a necessity for new accounts. However, some branches of foreign banks and banks specialized in terms of functions or locations, such as trust, do not have ATM units. A number of banks feel that the need for ATMs is due to increasing pressure from depositors to offer more convenient means of obtaining services either through the home, place of business, or other locations where depositors shop or visit.

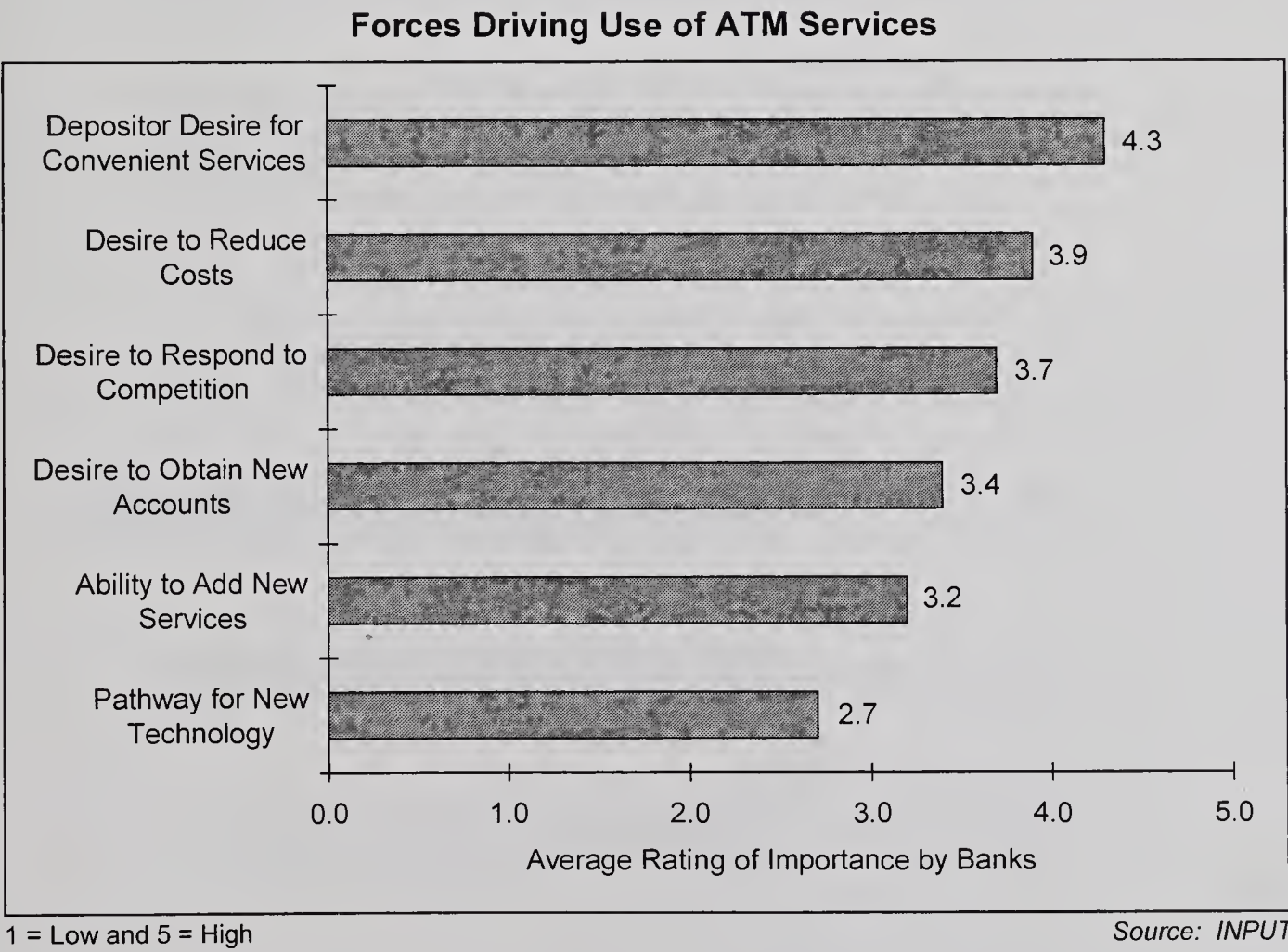
- A financial services research group has concluded that bank customers don't want to go to branches if possible.

- This research group concluded that bank depositors want devices in the stores or malls they utilize to provide them with cash, bill paying, loan application, investment origination, and other financial services when needed.

b. Forces Driving Use of ATM Services

Although many banks consider to ATM services a means of reducing branch and operational costs and responding to competition, as indicated in Exhibit III-10, banks rate the desire to satisfy consumer need for convenient banking services as the leading factor behind the rapid growth of these services. Several small community banks noted that they had no choice but to have ATM units available for cash dispensing when their offices were closed or lines were long or people who had used their services for years would start to use competitors.

Exhibit III-10



The desire to respond to competition and obtain new accounts is strong, as shown in Exhibit III-10, but drivers also include the possibility of offering new services or technological capabilities through these units.

- One bank noted that it has recently developed a service for withdrawing funds against a credit line through an ATM and feels that this will have an effect on local competition.
- A number of banks are exploring developments in ATMs that could have a competitive impact.

Although they were not mentioned as trends, INPUT expects the use of kiosks that provide a set of banking services to grow.

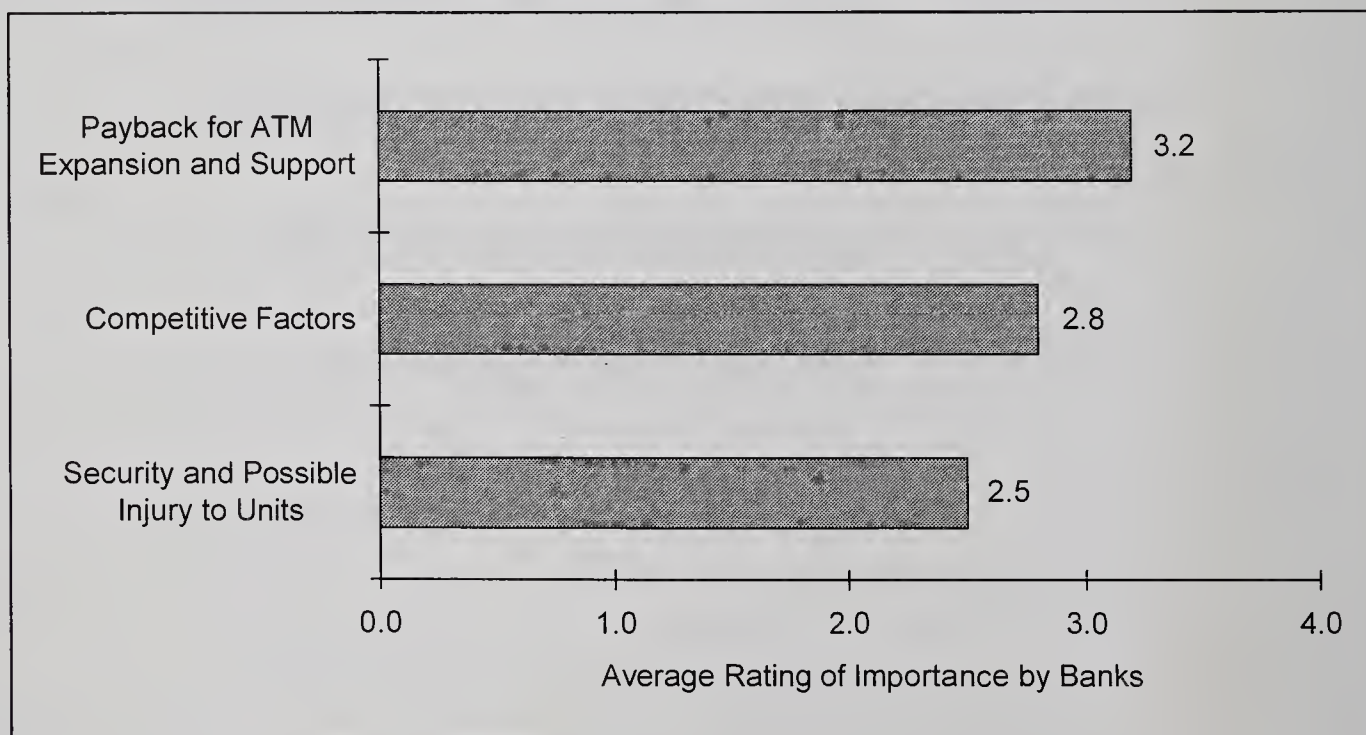
- Kiosks or advanced ATMs are being used on a trial or pilot basis with and without attendants. These installations can result in significant personnel savings as well as being remote points of banking service that are attractive for customers.
- Some of the services that banks are providing in markets or other locations will be provided at kiosks or advanced ATMs in the future.

c. Inhibitors

Although there is overwhelming pressure on banks to have ATM units, at least to provide cash-dispensing services when branches are not open, banks do report that there are factors that could inhibit ATM use, as shown in Exhibit III-11.

Exhibit III-11

Factors Inhibiting ATM Plans



1 = Low and 5 = High

Source: INPUT

Several banks reported that they had changed, canceled, or postponed plans for ATM expansion after evaluating the payback that could be achieved.

- A number of banks feel they have become a cash supply service for people who are doing most of their banking business elsewhere.
- In cases where banks feel they are not getting enough bank business from ATM users, banks have used that argument as a reason for charging new ATM fees, recently.
- Steps have been taken by some banks to persuade ATM users to use more bank services by advertising selected services at an ATM unit. Steps are also being taken to introduce other services through ATMs that would promote additional bank business while customers are obtaining cash.

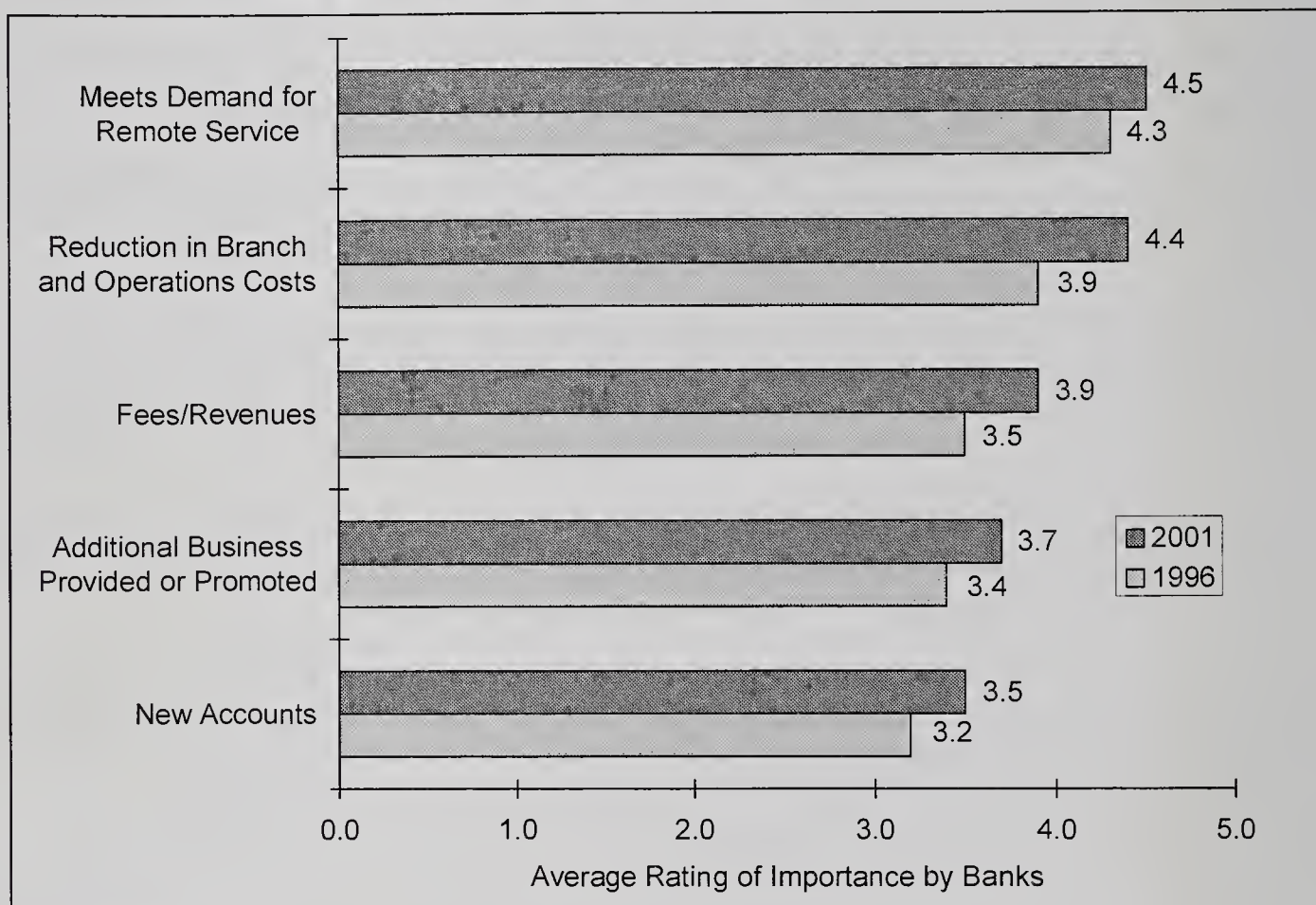
One bank stated that it might be more profitable to develop home banking or Internet services and limit ATM services to what was necessary to hold accounts.

Problems involved with fraudulent cards and possible mistreatment of machines in some locations are recognized and can inhibit ATM expansion to some extent.

3. Analysis of Benefits

The benefits of ATM and advanced ATM systems reported by banks rates monetary benefits highly, noting that both fee income and cost reductions have been achieved. However, the ability to satisfy the needs of depositors was reported to be the primary benefit, as indicated in Exhibit III-12.

Exhibit III-12

Benefits of ATMs, Advanced ATMs, and Kiosks in the U.S.

1 = Low and 5 = High

Source: INPUT

Although customer satisfaction is reported to be the leading benefit for ATM systems in 1996 and 2001, the average importance of revenues and cost reductions are expected to rise strongly, as shown in Exhibit III-12. The goal of satisfying customers does not rise much in importance over time.

- A number of smaller regional and community banks are much more concerned with installing ATM units to maintain or raise customer satisfaction than larger banks are.
- Some larger banks report that revenues, cost reduction and additional business are more important than customer satisfaction. One large regional bank stated that you have to be pleasing enough customers if you are making money and growing.

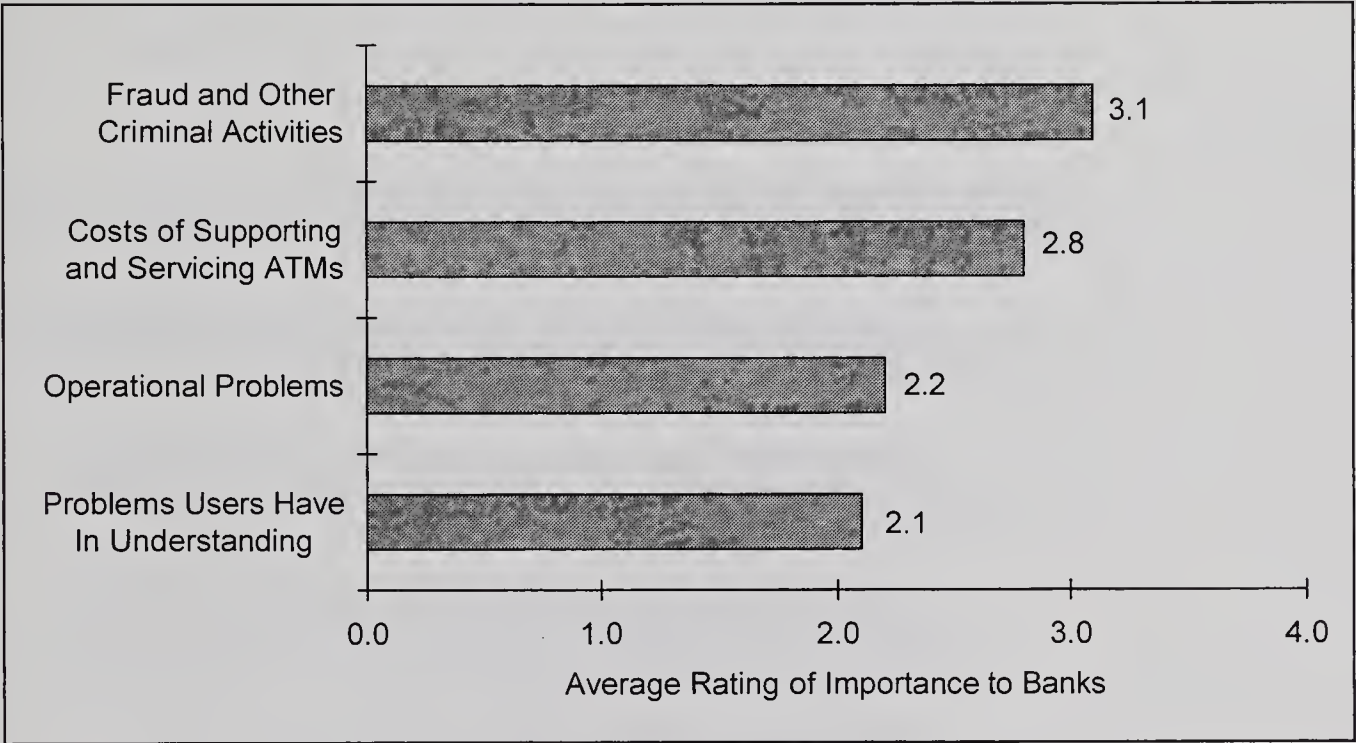
There is a moderate amount of interest in banks of all sizes in using ATM installations to help sell other bank services, whether that might involve additional services that could be sold through the ATM device, such as bill payment, or services that are advertised at ATM locations or on ATM screens.

4. Possible Problems and Solutions

Fraud or criminal actions with access cards or actual damage to devices by passersby are the leading ATM problems, according to banks and indicated in Exhibit III-13.

Exhibit III-13

Problems Reported with ATM and Advanced ATM Systems



1 = Low and 5 = High

Source: INPUT

A number of bank respondents reported interest in using an ATM card that used a chip (a Smart Card) together with or instead of a magnetic stripe. Several of the banks felt that this change might be part of a movement toward a card with greater security that could be used for ATM, POS and off-line access to machines that provided products, services, or cash.

For some banks, the problem that commands the most attention is the cost of supporting and servicing ATM systems.

- A few of the banks that reported this admitted that they had not analyzed costs sufficiently.
- Several banks noted that the costs of ATM devices versus their benefits should be analyzed on a location-by-location basis. Some locations did not warrant machines in view of costs resulting from mistreatment of machines.

Other problems, such as those encountered by users, are much less of an issue than they are with home banking, according to banks that offer both

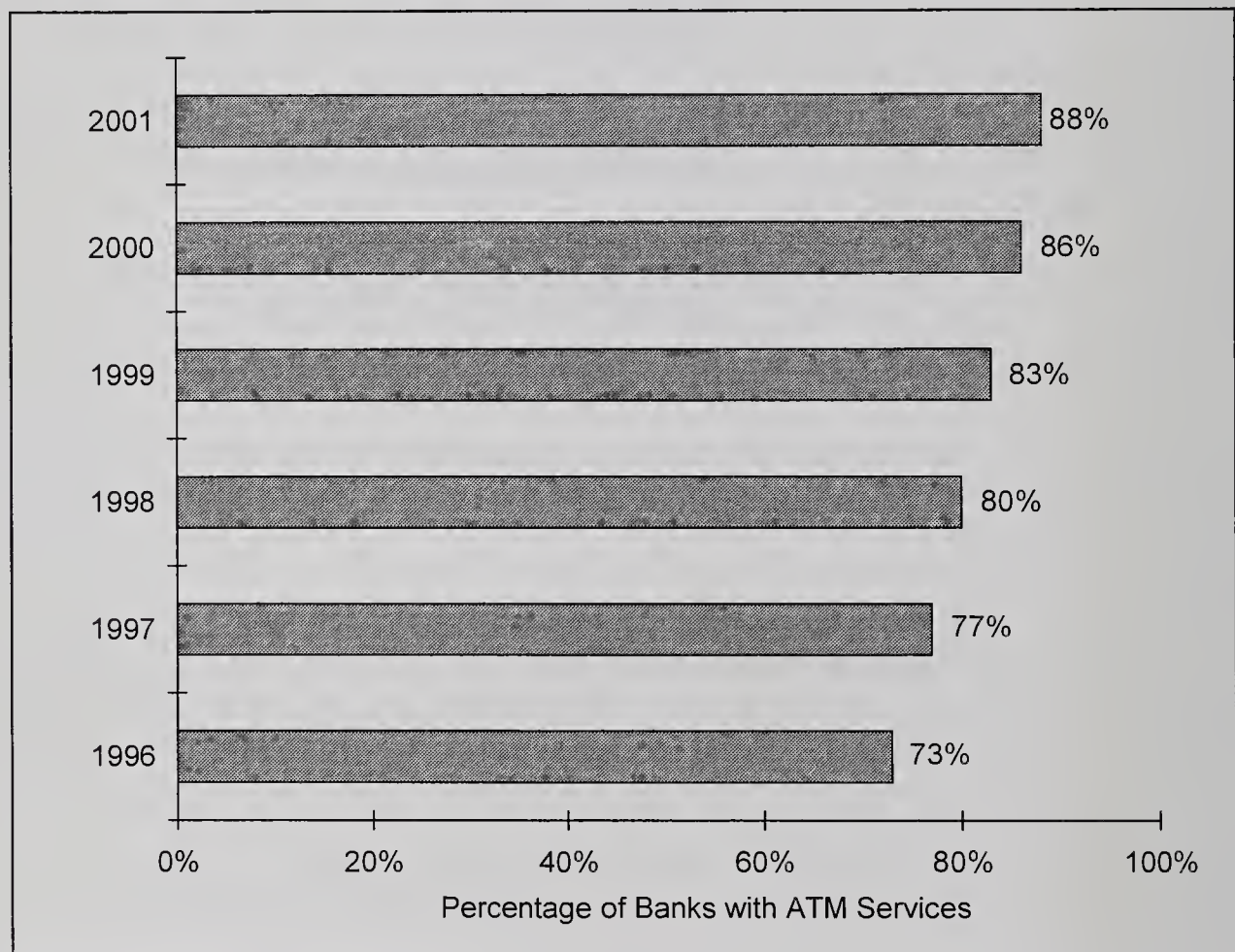
services. However, banks did note that education through leaflets or posted instructions had to be improved in order to meet customer needs.

5. Forecast of Use of ATM Systems Among Banks, 1996-2001

The use of ATM systems is measured between 1996 and 2001 in terms of the percentage of banks providing service with these devices, as shown in Exhibit III-14. Penetration is reported to be lowest among certain types of institutions such as savings institutions, particularly in New York, and Florida.

Exhibit III-14

Forecast Use of ATM, Advanced ATM, and Kiosk Services in the U.S.



Source: INPUT

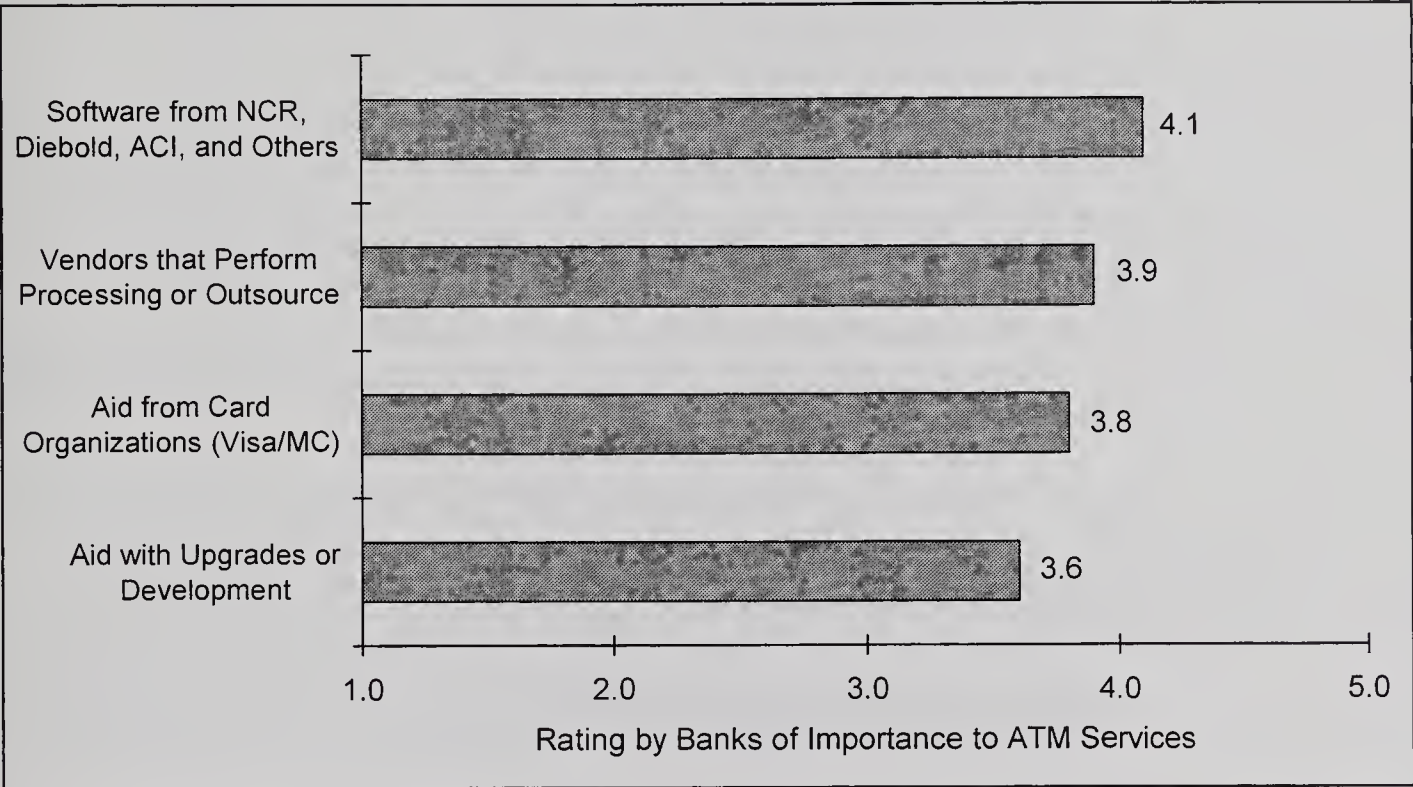
The percentage of commercial banks, thrifts, and credit unions using ATMs will continue to grow, but the market will become more saturated by 2001. There will also be differences in the units provided as ATMs (or kiosks) by that time. They will incorporate additional services as discussed above, multimedia that makes ATM use easier and more entertaining, and features designed to give a user the impression that bank personnel are “virtually present or available” as part of the service.

6. Importance of Vendor Products and Assistance

Vendors such as NCR and Diebold are important not just for supplying the physical ATM devices, but also for supplying the software for ATM services. A number of other vendors active in the banking market supply software and services to support ATM systems, including IBM, Unisys, ACI, EDS, and DEC, as illustrated in Exhibit III-15.

Exhibit III-15

Importance of Vendor Products and Aid for ATM Systems



1 = Low and 5 = High

Source: INPUT

Due to the need for ongoing experience with this technology in order to plan and implement ATM systems, vendors are utilized by most banks. Large banks such as Citibank and Bank of America, as well as banks such as Corestates that have concentrated on this technology, report that they have the expertise to perform development functions for ATM projects by themselves.

C**Smart Cards****1. Overview of Smart Card Services**

An increasing number of banks and vendors have formulated strategies for the use of Smart Cards that will provide a stored-value capability, but many banks in the U.S. report that they are unsure about the steps that will be taken with this product. Some banks in the U.S. are participating in pilot applications or experimenting with Smart Cards, although use has not been as widespread as in Europe and Asia.

First Union Bank, NationsBank, and Wachovia are participating in a pilot with Visa at the Olympics in Atlanta that will involve the sale and use of up to a million cards with a chip. The initial card will be non-reloadable, with a value up to \$100 that can be used at 5,000 locations of 12 merchants.

- After the Olympics, the card will be introduced in other cities and steps will be taken by First Union (and other banks) to provide the ability to update the card with money at ATMs.
- In order to have the ability to update some Smart Cards at an ATM, cards may have a mag stripe as well as a chip (a hybrid card).

MasterCard had to delay the pilot planned for early 1996 in the U.S., but it has a pilot under way in Australia involving three banks, 10,000 consumers, and the use of a combined or multifunction card that can store a value and is also a credit and/or debit card.

Citibank and Chase announced a pilot in New York in April with Visa and MasterCard that will test the viability of using a stored-value card in place of pocket money. The pilot, which is scheduled to start in the fourth quarter, will involve about 50,000 cards and 500 merchants. Cards can be updated at ATMs.

Other banks and vendors with pilots under way or planned in the U.S. include the Mellon Bank undertaking with EDS and a possible plan of Citibank that involves a different standard for electronic money (EMS). This is not the same as the standard for Smart Card terminals planned by the "EMV" associations (MasterCard, Visa, and Europay).

Wells Fargo is introducing the Mondex Smart Card product that also uses a standard different from the "EMV" group.

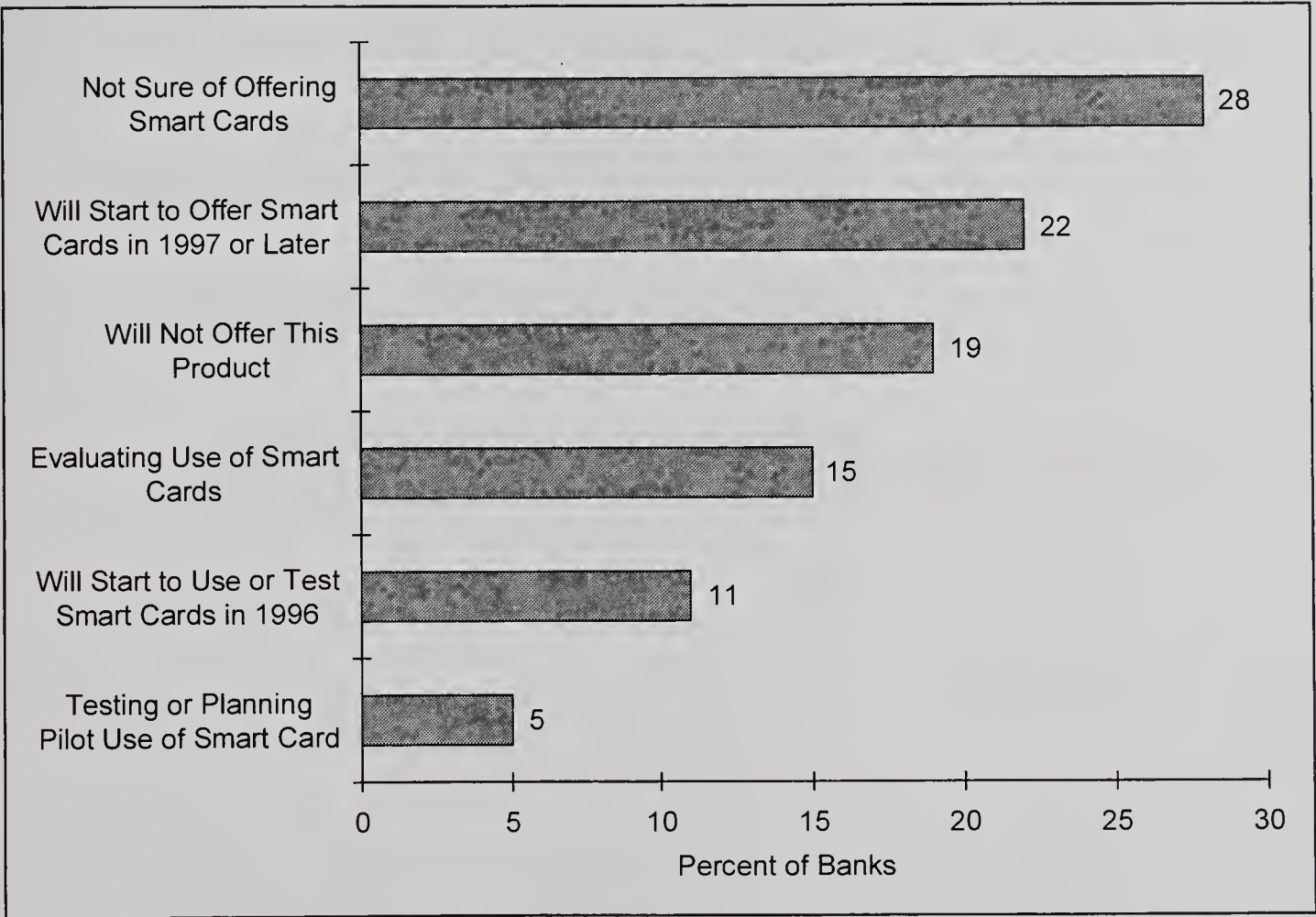
- Mondex, the electronic cash system developed by NatWest and tested in England, is an electronic replacement for money, which is what Citibank is introducing. In contrast, the money that is stored on EMV cards, when they are updated at ATMs, is prepaid debits.
- Citibank has designed its system to work on computer networks with a high level of security. Banks will be able to keep track of electronic money they are using and transactions on the Internet.

A card manufacturer mentioned that it is supplying cards with a chip for tests at several banks in the U.S., including one that will test payment on the Internet from a Smart Card. A board for a PC, which the Smart Card plugs into, will be used to access a money amount on the card, which can then be sent to a merchant on the Internet.

In summary, a small percentage of banks are presently using or testing Smart Cards in the U.S., but a surge of activity is anticipated, as shown in Exhibit III-16.

Exhibit III-16

Present Use or Plans for Smart Cards



1 = Low and 5 = High

Source: INPUT

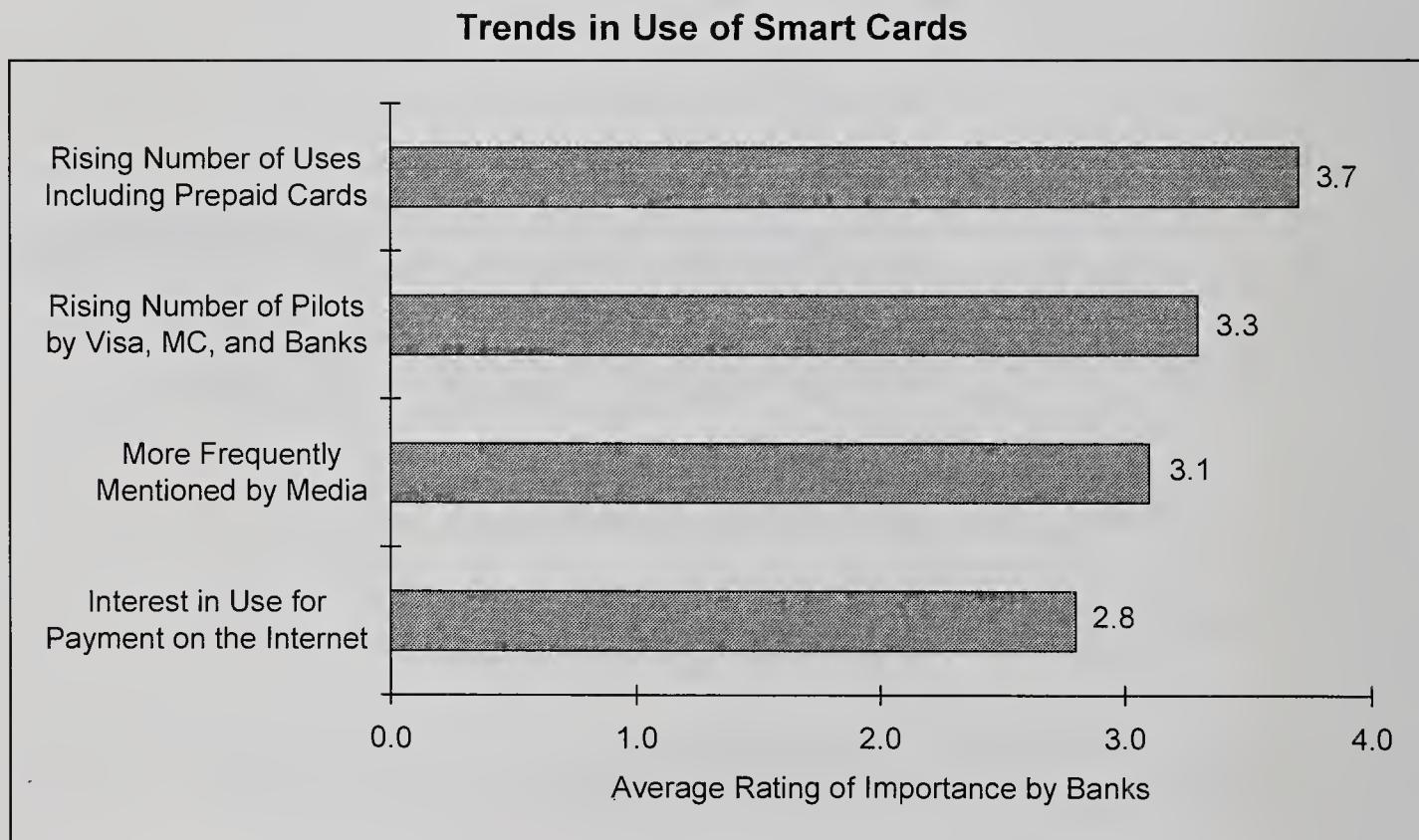
Although less than 40% of banks are presently committed to Smart Cards, a number of bank contacts planning to use the product or evaluating it pointed out that they were opposed to its introduction in the past. Several banks that are not sure of offering a stored-value card for depositors admitted that they might have to offer a capability for Smart Card updates if the government Electronic Benefits Transfer program is implemented. Acceptance of Smart Cards is growing.

2. Trends, Drivers and Inhibitors

a. Trends for Smart Cards

Although the use of Smart Cards is not substantial in the U.S. at present, interest in it is growing due to the rising use of prepaid cards and tests being conducted, particularly the use of Smart Cards at the Olympics, as illustrated in Exhibit III-17.

Exhibit III-17



1 = Low and 5 = High

Source: INPUT

Although most banks have not embarked on a program to use Smart Cards or find applications for them, the increasing use of them in tests or mention of them in periodicals or newspapers has led a number of banks to feel that steps should be taken to try out the technology.

- Some banks mentioned that stored-value applications on Smart Cards might offer customers a safer way to carry money.
- The rapid growth of interest in the Internet has increased interest in a vehicle for paying for services or products obtained on the Internet. However, several banks felt that a credit card could still be better for that purpose.

Banks are also interested in Smart Cards because some IT vendors are planning to deploy them for uses such as off-line access to cash. Mellon Bank reported that it has made arrangements with vendors who are implementing Smart Card systems at retail locations.

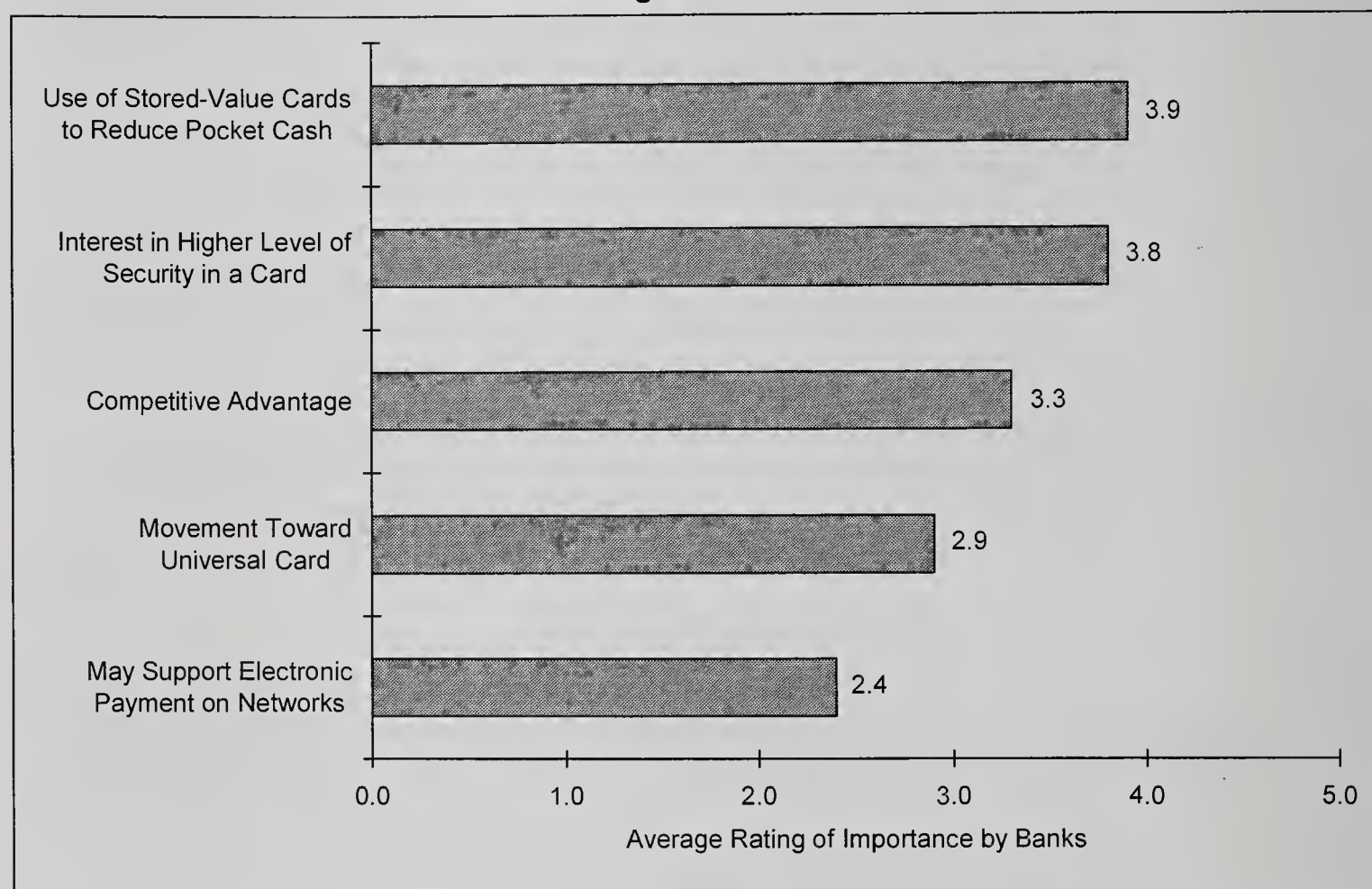
b. Forces Driving Use of Smart Cards

Banks feel that Smart Cards' stored-value capability to reduce branch work and save costs is a strong driver for their use. Banks also report that Smart Card use will be a great advantage to users because it can reduce the need for pocket money and frequent visits to a bank to cash a check. Banks report that the issue of security is one of the chief forces driving use of Smart Cards, as shown in Exhibit III-18.

- Banks point out that the use of a chip on a card can offer more security in card transactions than magnetic stripes can offer.
- Banks also feel that the option of getting stored money on a card may be a preferable alternative to having cash dispensed from an ATM.

In addition, some banks have heard that a Smart Card may provide a means of paying Internet bills or taking a step toward developing a universal card to take the place of multiple current cards.

Exhibit III-18

Forces Driving Use of Smart Cards

1 = Low and 5 = High

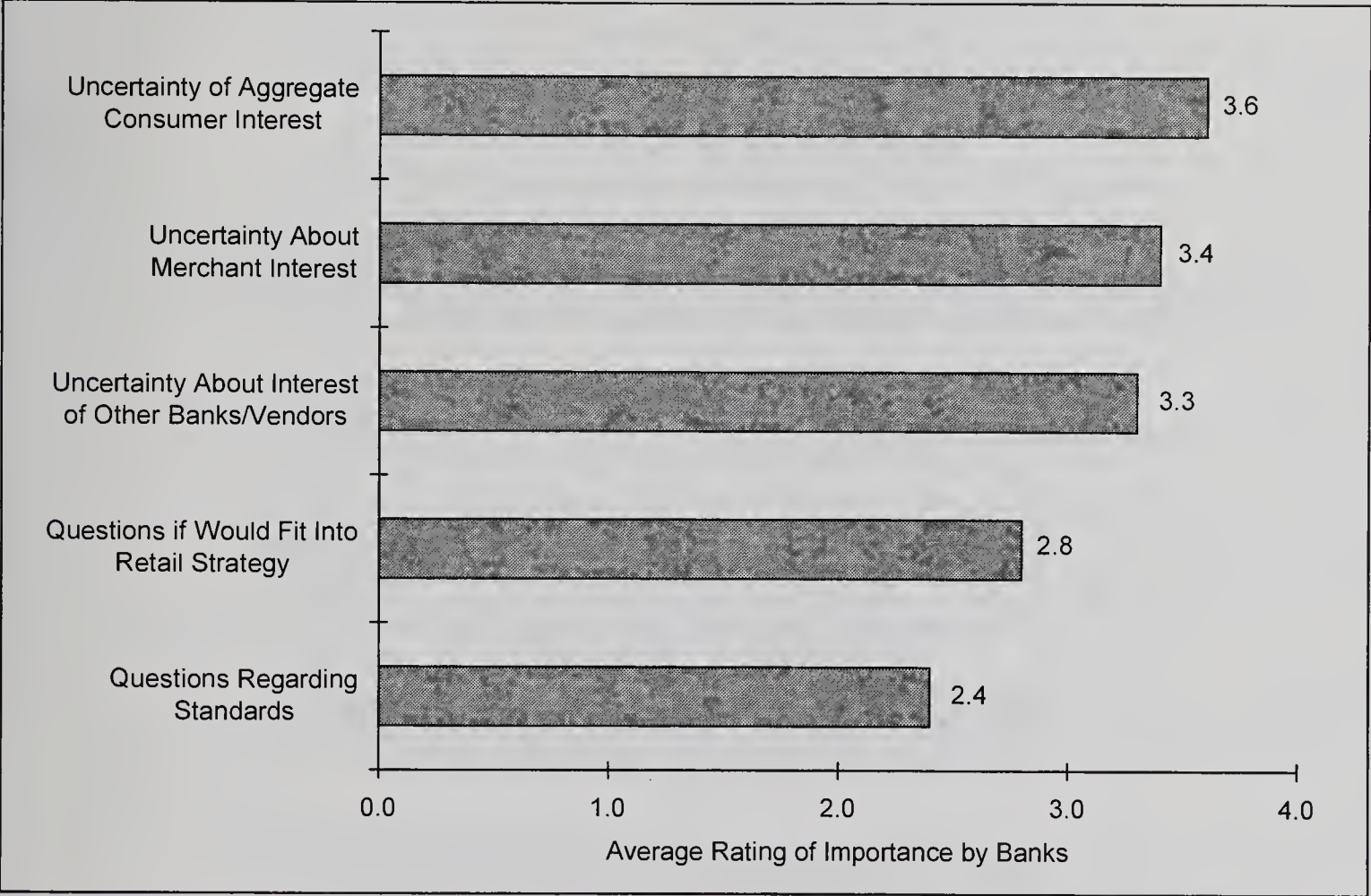
Source: INPUT

c. Inhibitors

Banks are still uncertain about how many of their own depositors are interested in the product, as well as the interest of merchants and other banks with which they have contact, as shown in Exhibit III-19.

Exhibit III-19

Factors Inhibiting Smart Card Use or Plans



1 = Low and 5 = High

Source: INPUT

Banks, including those planning for or already using Smart Cards, are uncertain about the product and its benefits. Statements from vendors and consultants had not mitigated this feeling.

Banks also reported that they had questions about how the product would fit into retail product plans. Would it just be substituted for existing cards or supplied as part of a promotion of improved capabilities?

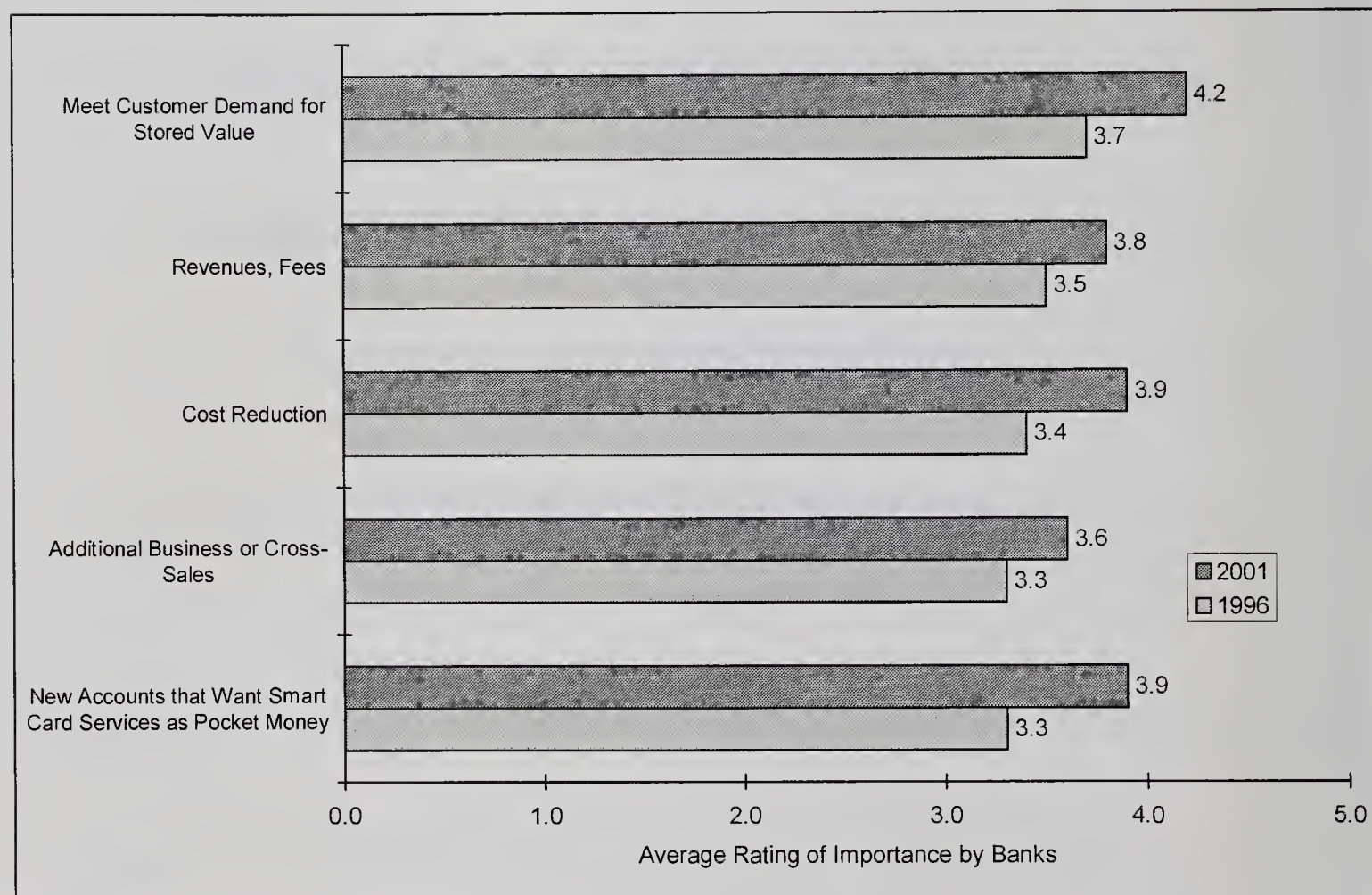
Bank respondents also felt or had concluded that there were standards issues that had not been resolved among card organizations and vendors involved with the product and thought that their banks should consult banking industry groups before going further.

3. Analysis of Benefits

Many banks emphasized that the benefits shown for Smart Cards in Exhibit III-20 were potential rather than actual.

Exhibit III-20

Benefits of Smart Cards in the U.S.



1 = Low and 5 = High

Source: INPUT

Although revenues and cost reductions are rated as important, about one-third of bank respondents feel that this product is more likely to result in customer satisfaction and to generate additional services and new accounts than increase revenues or help reduce costs. The fees and revenues depend on the willingness of merchants to pay for terminals and pay fees for transactions.

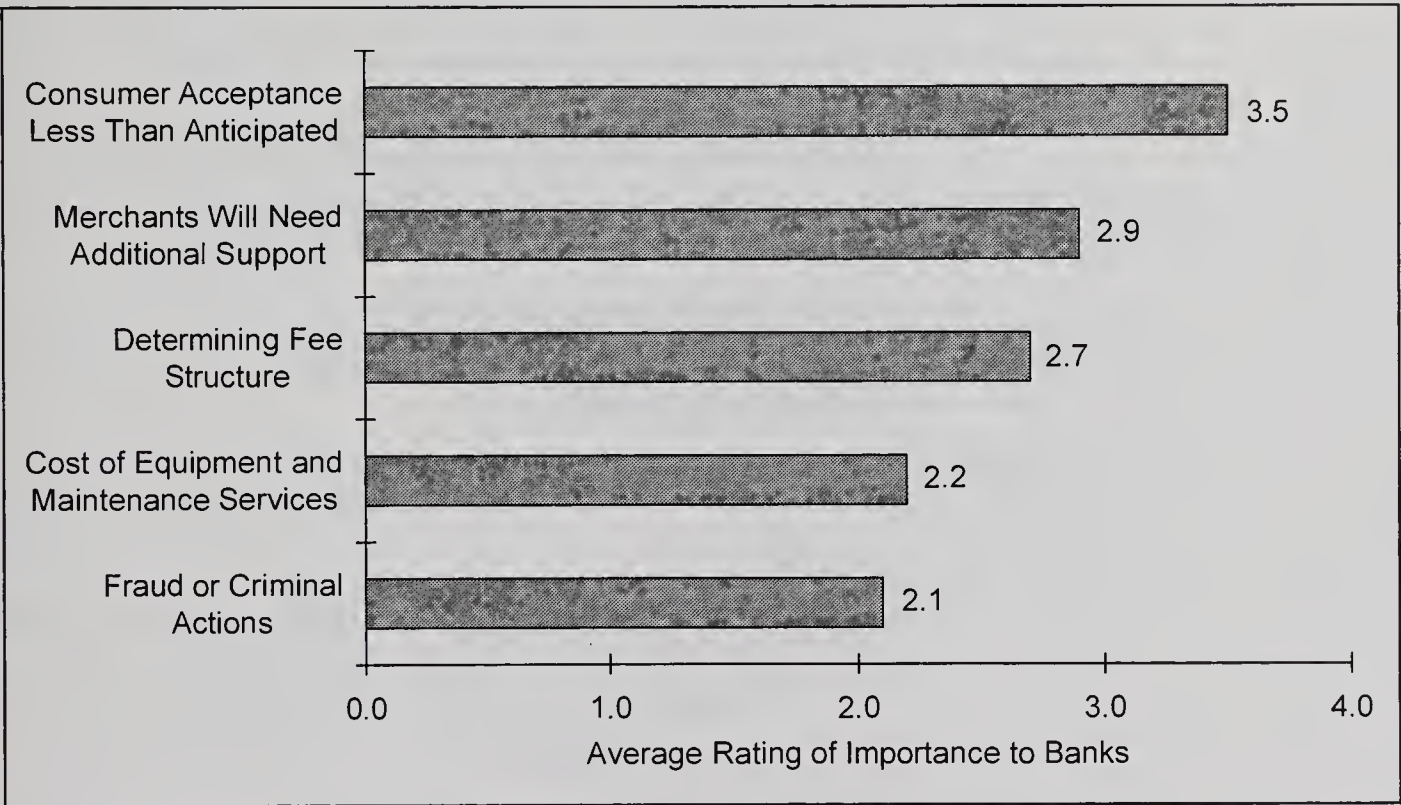
In the pilot planned by Chase, Citicorp, Visa and MasterCard in the fall of 1996, banks expect the use of branches and costs to drop as the use of stored value cards increases. Some larger banks think that the product can help to promote the bank and attract new accounts. They also feel that the product can stimulate additional business since customers would have to open bank accounts and utilize ATMs in conjunction with the service.

4. Possible Problems and Solutions

The problems that banks are concerned about with Smart Cards, listed in Exhibit III-21, reflect the fact that Smart Cards are still a new concept to many banks.

Exhibit III-21

Problems Reported or Anticipated with Smart Cards



1 = Low and 5 = High

Source: INPUT

If planning has not been adequate, business may not materialize and/or merchants may not be able to support or encourage the use of Smart Card devices on their premises. They also may not want to pay fees as envisioned.

- To guard against these disadvantages, banks can use consultants or a vendor to study the situation.
- A consultant or partner can also help determine fee structures, estimate costs, and develop measures to guard against fraud or other criminal activities if such might possibly occur.

Participation in an alliance such as Smart Cash, which MasterCard was cosponsoring, can provide assistance in launching or supporting this product.

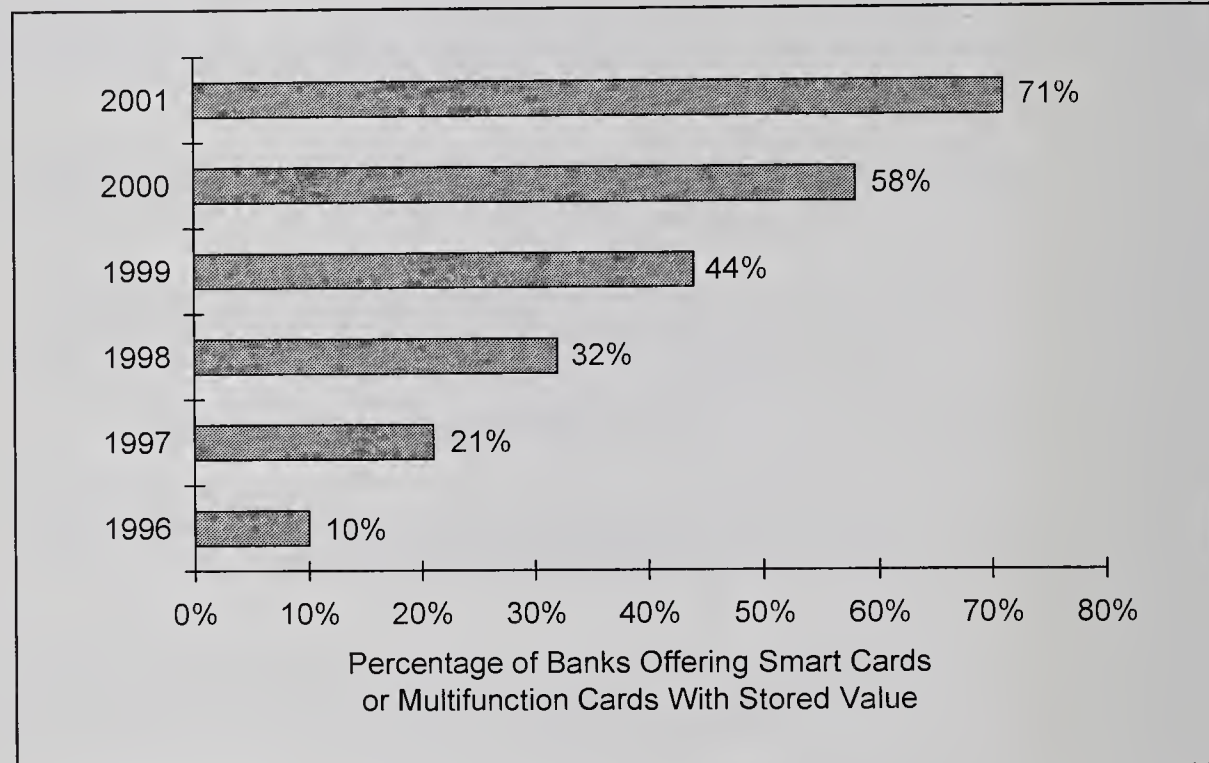
A bank can also choose to let a vendor handle Smart Card devices and systems and support the vendor in such activities as loading certain devices with money and supplying depositors with Smart Cards.

5. Forecast of Participation in Smart Card Use, 1996-2001

Launching Smart Card use has to involve the issuance of Smart Cards by a bank. Some banks may also acquire Smart Card devices and locate them in off-bank premises. The percentage of banks that report or plan Smart Card offerings will begin to increase more rapidly, as shown in Exhibit III-22.

Exhibit III-22

Forecast of Smart Card Usage in the U.S.



1 = Low and 5 = High

Source: INPUT

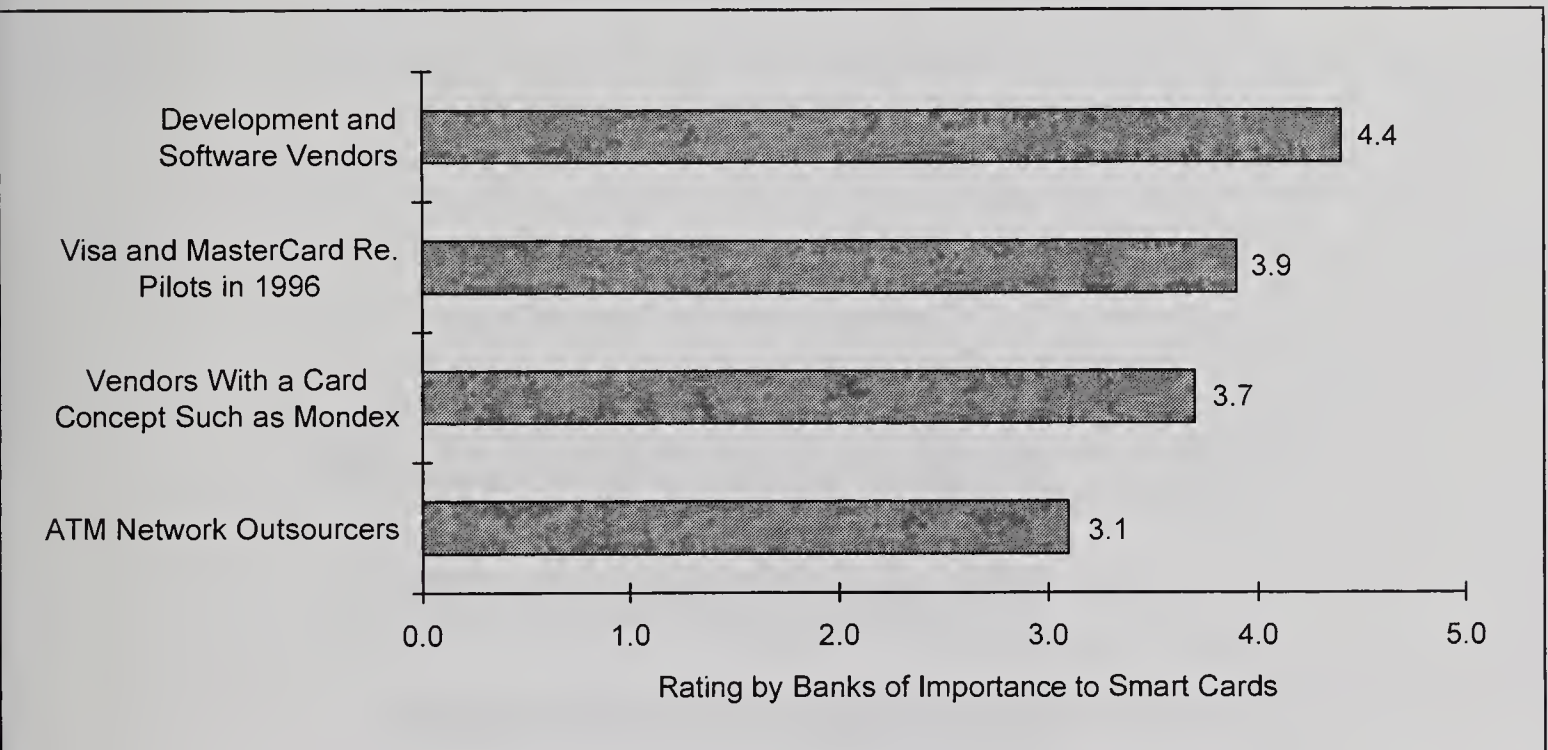
Because some banks do not plan to offer Smart Cards, the percentage of banks offering Smart Cards could reach a plateau shortly after 2001. However, the number of nonbank competitors may continue to grow. Several banks stated that they expect the number of bank cards with chips to exceed 100 million within five years, but all these cards may not have a stored-value capability.

6. Importance of Vendor Products and Assistance

Vendors such as Unisys, IBM, EDS, NCR, ACI, and Andersen Consulting report that they will offer assistance with Smart Card projects, but it is too early to predict how these services will develop and which vendors in total will be involved. Vendors that were mentioned by banks in regard to this technology are listed in Exhibit III-23.

Exhibit III-23

Importance of Vendor Products and Aid to Smart Cards



1 = Low and 5 = High

Source: INPUT

D

Credit and Debit Card Services

1. Overview

Although they predate many of the new products and services, credit and debit cards are included among retail electronic banking products by many bank respondents for two reasons.

- The first, but not the most important one, is that point of sale (POS) authorization and on-line transaction processing are involved.
- The second is that, as many banks report, credit cards contribute more to the retail revenue stream than any other electronic product offered in today's market.

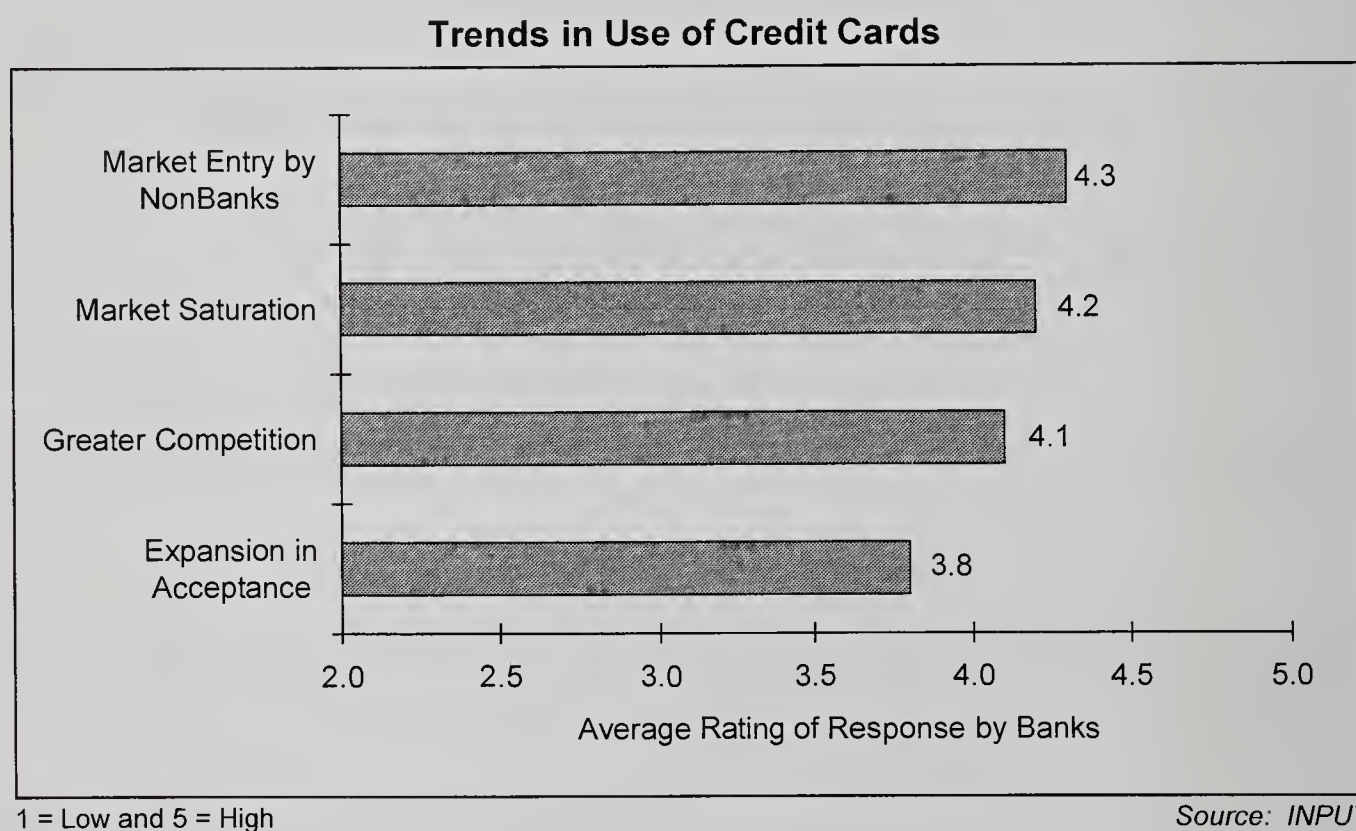
Following is an analysis of trends, drivers, and inhibitors associated with bank issuance of credit and debit cards. This includes all transaction types involved with credit and debit cards, including cash advance and convenience checks.

2. Trends, Drivers, and Inhibitors for Credit Cards

a. Credit Card Market Trends

The leading trends in the credit card market are the market entry of nonbank issuers, market saturation, which is leading to greater price competition, and emphasis on ways to retain customers as shown in Exhibit III-24.

Exhibit III-24



Powerful nonbank issuers such as Sears and AT&T stand out in the credit card market. Since 1991, many other nonbank institutions have entered the market and created brand recognition either directly through a bank acquisition or through cobranding. The major reason for market entry has been the consistent returns in this industry (average of 3%-4% pretax ROA).

Market saturation and the precipitous drop in consumer lending rates has led to vicious rate competition among issuers. Consumers continue to be

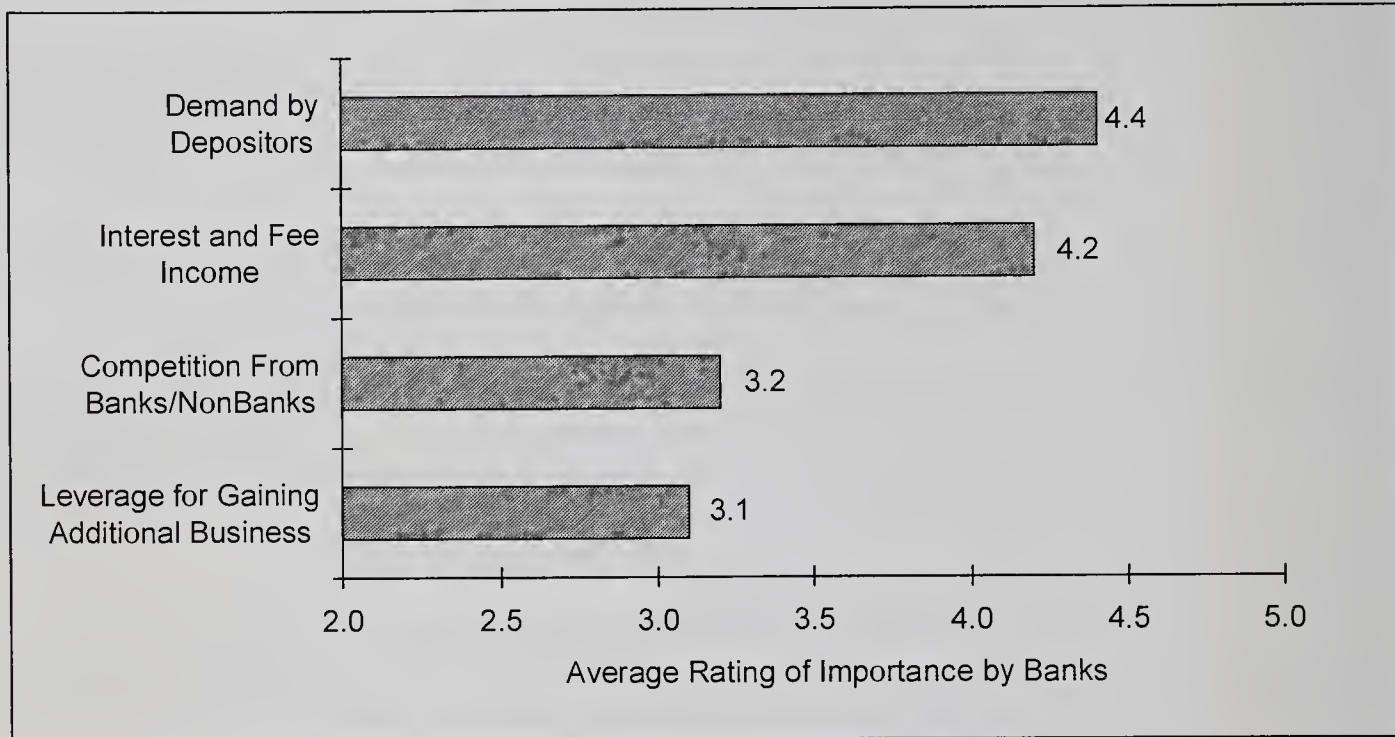
lured by offers of low-rate loan consolidation and teaser introductory rate offers.

- The success of these marketing tactics has led to significant portfolio attrition (rates of attrition may average 13%), which means issuers are having difficulty gaining replacement or winning back customers they are losing.
- Credit card executives report that issuers are merely recycling customers and lowering industry margins in the process.
- Market saturation and competition has also led banks to acknowledge the value of existing customer relationships and the high cost of replacing customers. Issuers are now shifting resources from acquisition into relationship-building strategies and using techniques such as frequent flyer miles to hold bargain-shopping customers.
- Another trend of interest in the credit card industry is the continuing expansion of acceptance of credit cards in areas once dominated by cash and checks. Key emerging areas include small ticket items such as groceries and gas, nontraditional outlets such as government and charities, on-line remote channels, and home shopping.

b. Market Drivers for Credit Cards

The primary drivers of credit card issuance are market demand, competition, and revenues, as illustrated in Exhibit III-25.

Exhibit III-25

Forces Driving Credit Card Offerings

1 = Low and 5 = High

Source: INPUT

Banks report that credit cards are necessary to retain present accounts as well as attract new ones.

- When individuals open accounts at banks, they expect the bank to have a credit card available.
- Competition from other banks and from nonbanks is harder to fight if credit cards are not part of the product mix being offered, according to bank respondents.

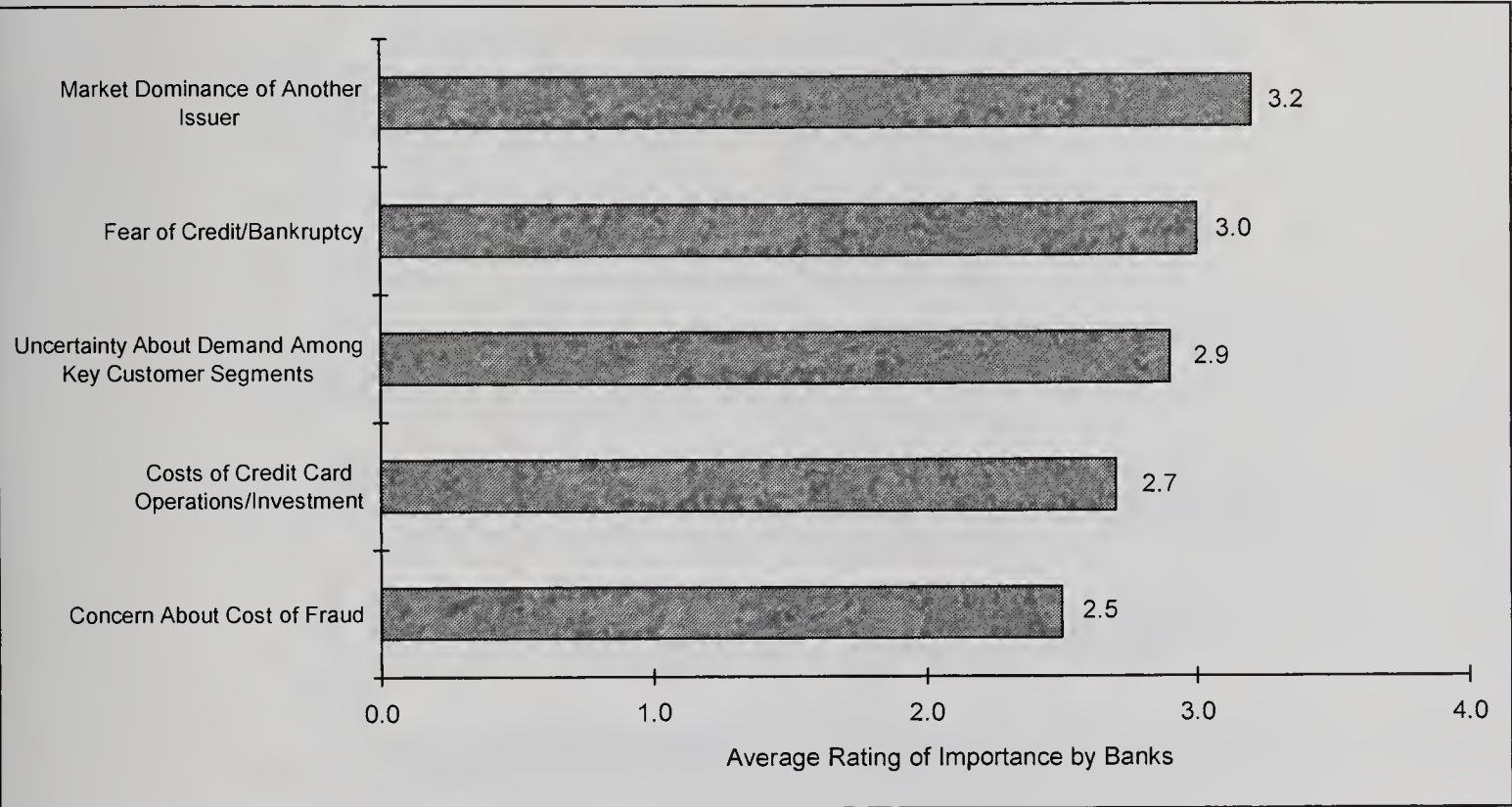
Credit card business can also lead to the use of other bank products. The client of another bank who begins to use credit cards could be interested in a home equity loan to reduce interest charges or a DDA account marketed at a special price to credit card accounts.

c. Market Inhibitors for Credit Cards

Most banks emphasized that they would not be deterred from offering their own credit cards, but they report that there are factors which could make banks carefully evaluate their intentions. Chief among these was competition from larger financial institutions, as indicated in Exhibit III-26.

Exhibit III-26

Factors Inhibiting Use of Credit Cards



1 = Low and 5 = High

Source: INPUT

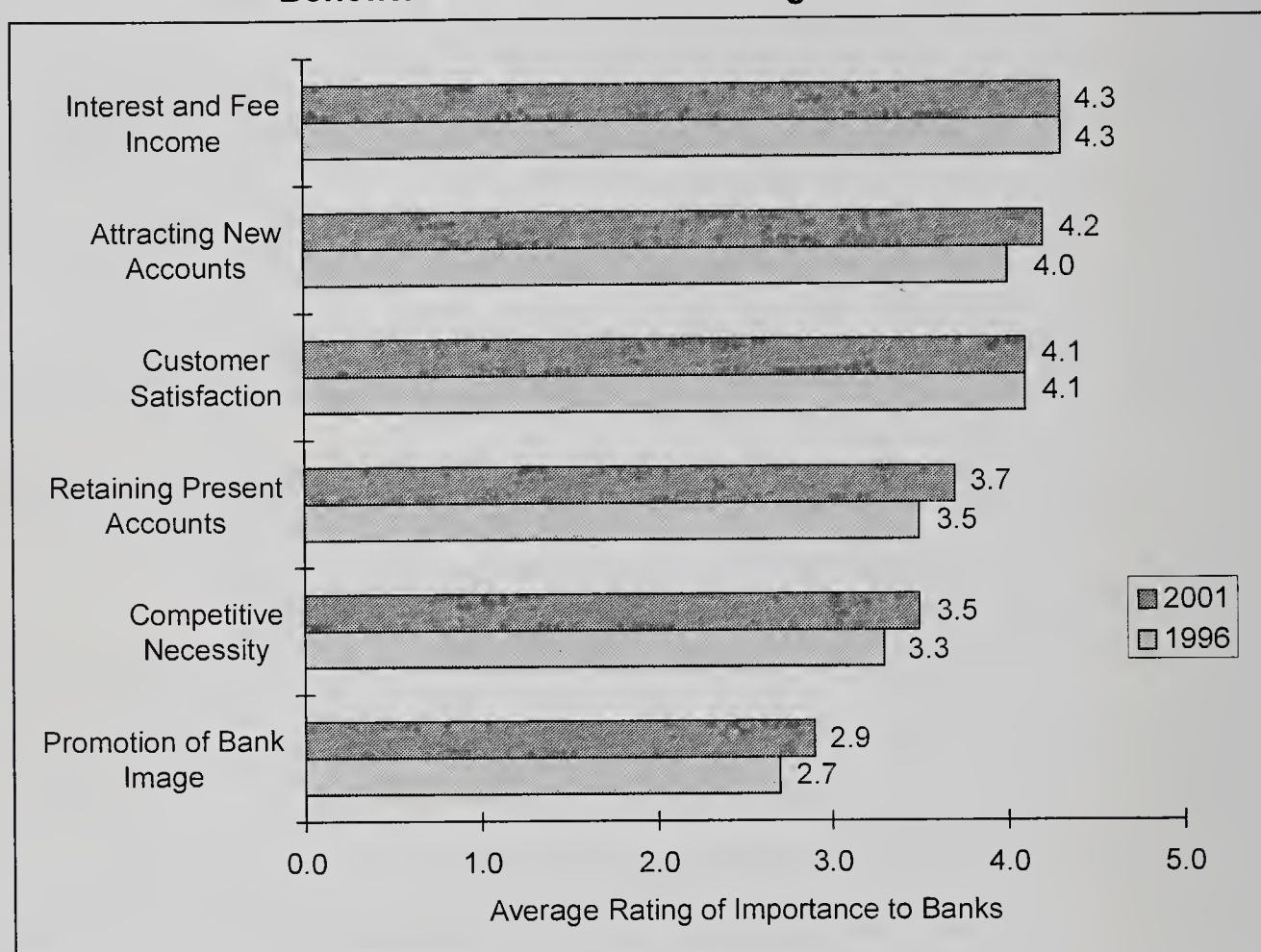
Regional and community banks cited the difficulty of competing with major national brands that had achieved prominence in their local market. In some cases, they indicated willingness to affiliate with another, dominant bank.

Some regional and community banks also felt that an unwillingness of some depositors to utilize credit and the costs of credit card operations could be deterrents. Some were also concerned about the cost of fraud.

3. Analysis of Credit Card Benefits

Banks consider credit cards a highly attractive source of revenues and profits, as well as a highly attractive product for most consumers. The importance of credit cards for retail banking is expected to be strong through 2001, as shown in Exhibit III-27.

Exhibit III-27

Benefits of Credit Card Offerings for Banks

1 = Low and 5 = High

Source: INPUT

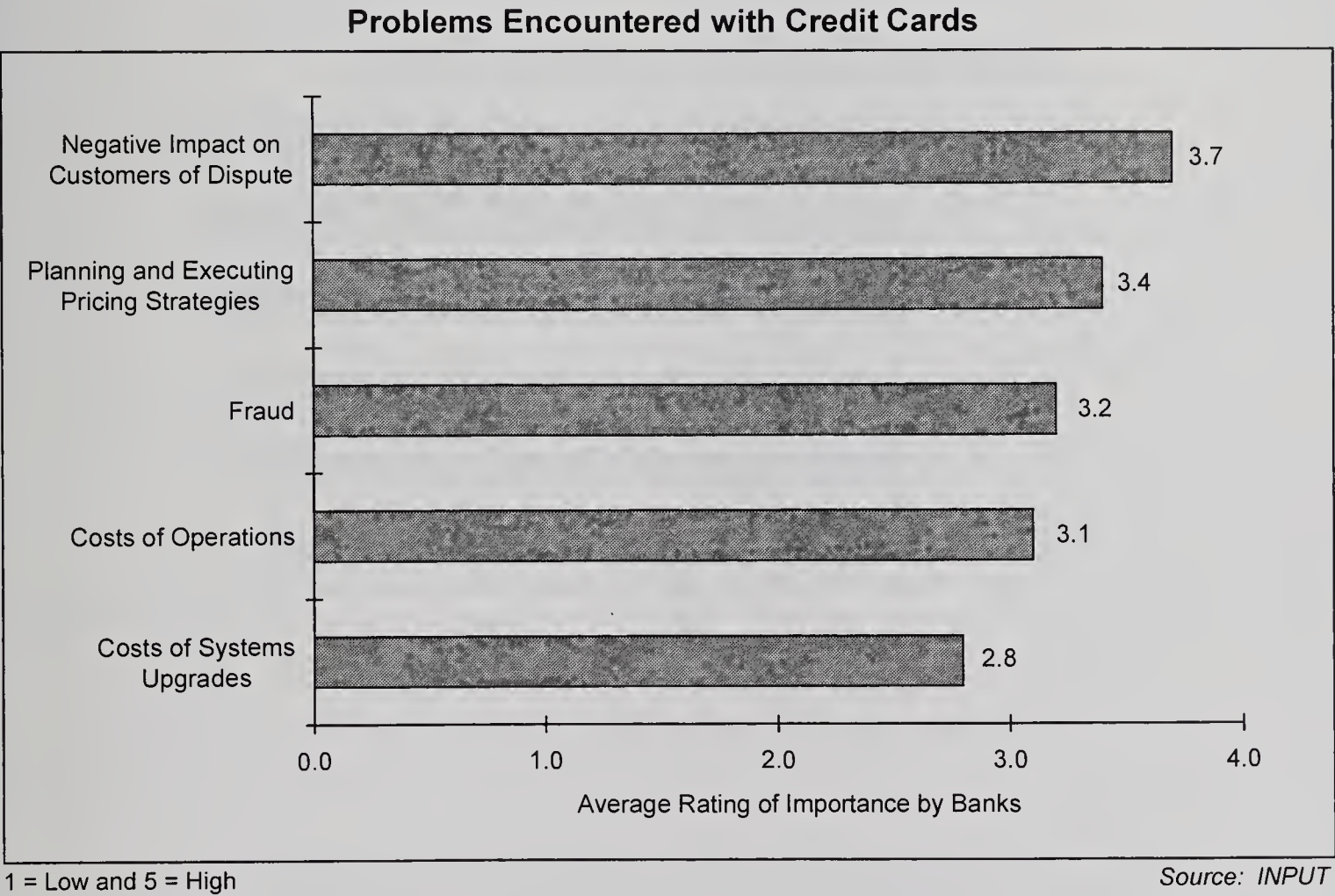
In addition to their contribution to the bottom line, bank respondents report that credit cards increase customer satisfaction, improve competitiveness, and enhance the image of a bank. Cards can also be used for relationship management strategies that offer price or fee reductions for combined services.

Longer term, credit card payment systems should also aid in the development of home banking and other new payment platforms as consumer demand develops.

4. Possible Problems and Solutions

Bank respondents emphasized that problems occurring with credit card issuance were not significant in relation to attendant benefits. However, they did list difficulties, which are shown in Exhibit III-28.

Exhibit III-28



Several banks pointed out that dispute resolution and chargeback problems might be ameliorated by creating help-desk functions similar to those that have been successfully deployed in other areas.

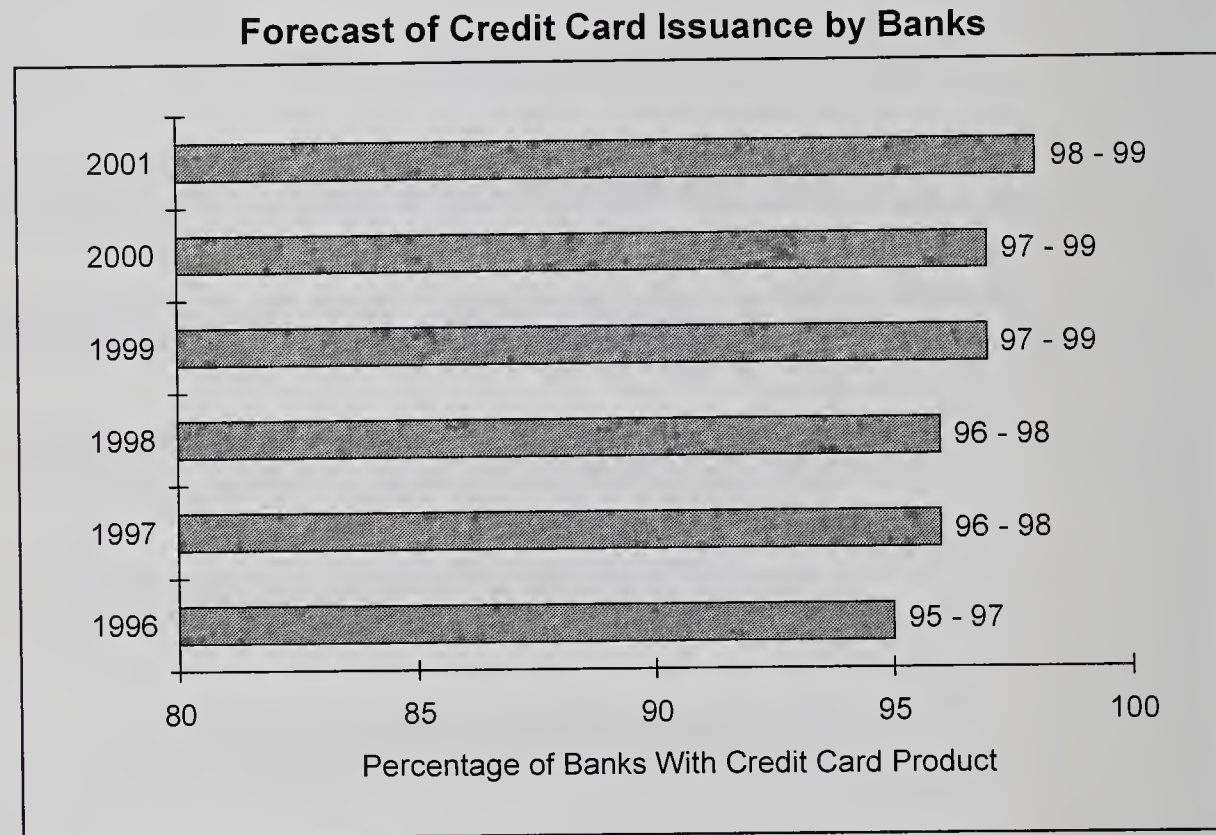
Card associations have been helpful in efforts to analyze and lower the incidence of fraud. Banks report that these associations have been helpful in investigating and reducing the incidence of fraud as well as in planning for cost-effective systems upgrades and solutions to cost problems.

Some banks have used consultants to help develop interest and fee strategies.

5. Forecast of Credit Card Issuance by Banks, 1996-2001

Credit card issuance and use continues to grow. The market for credit cards is virtually saturated, and incidence of bank participation cannot increase much beyond the current level, as shown in Exhibit III-29.

Exhibit III-29

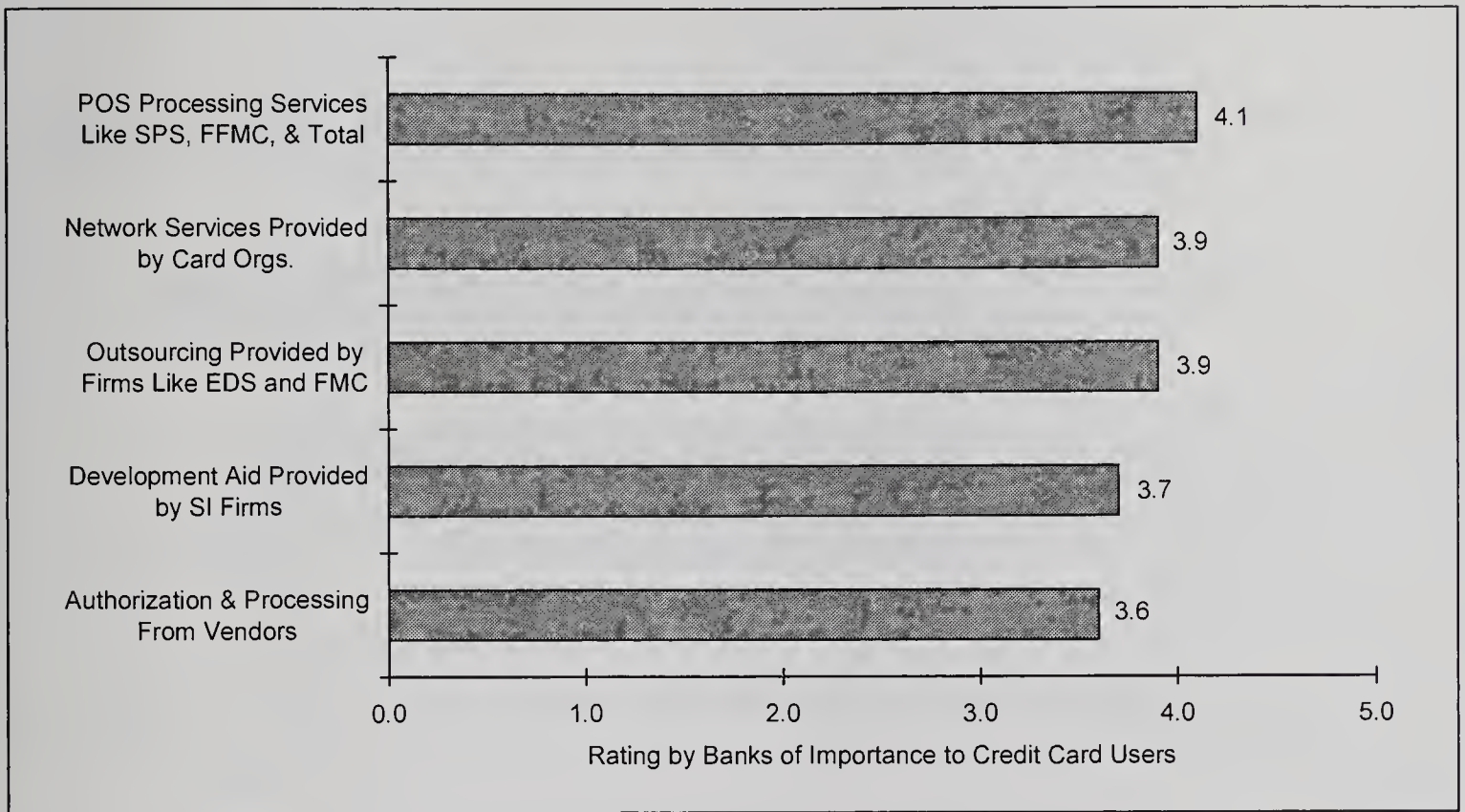


Source: INPUT

6. Importance of Vendor Products and Assistance

Card transaction processing services and software to handle account processing are considered very important to credit card-issuing banks, as shown in Exhibit III-30.

Exhibit III-30

Importance of Vendor Products and Aid in Credit Card Use

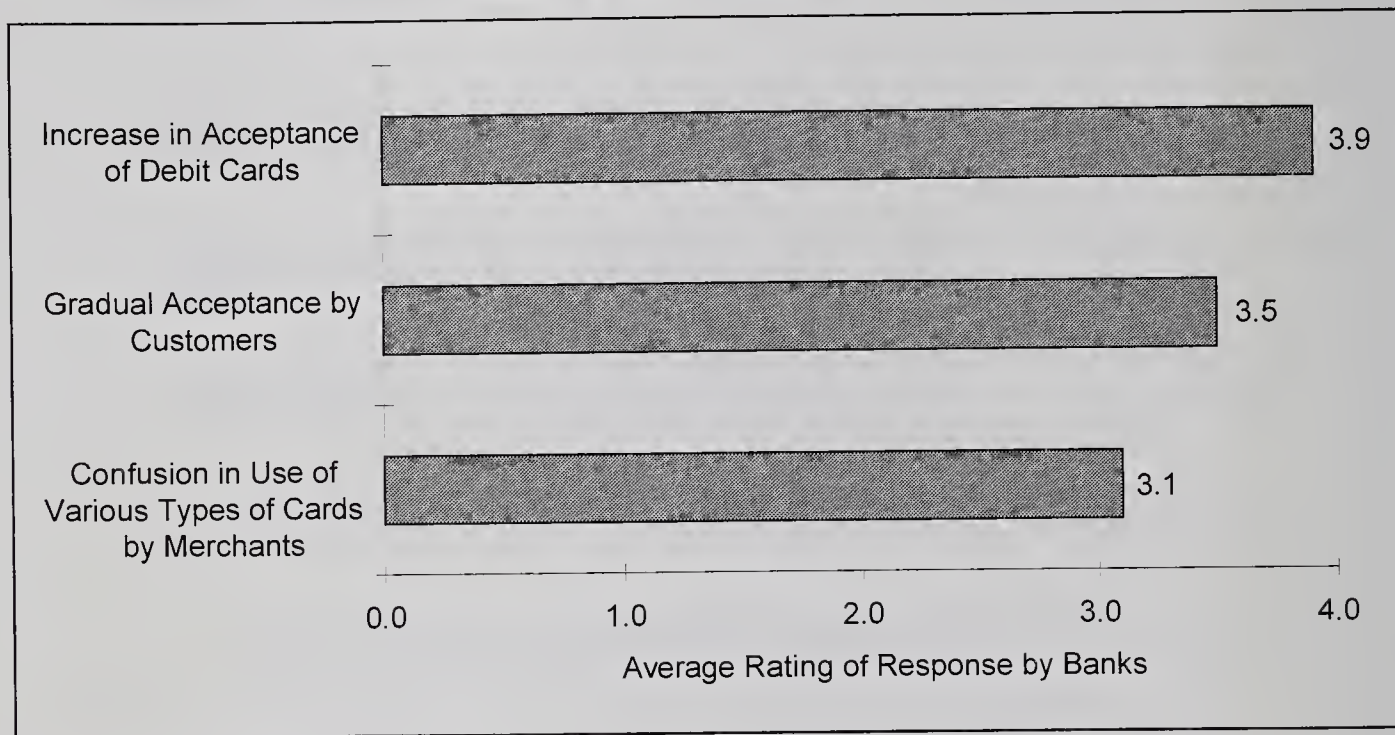
1 = Low and 5 = High

Source: INPUT

7. Trends, Drivers, and Inhibitors for Debit Cards**a. Trends in Debit Card Use**

The leading trends in the U.S. debit card market include increases in merchant and customer acceptance as well as customer questions about the number of cards being used. These trends are noted in Exhibit III-31.

Exhibit III-31

Trends in Use of Debit Cards

1 = Low and 5 = High

Source: INPUT

Merchants are accelerating the deployment of POS terminals for debit card use.

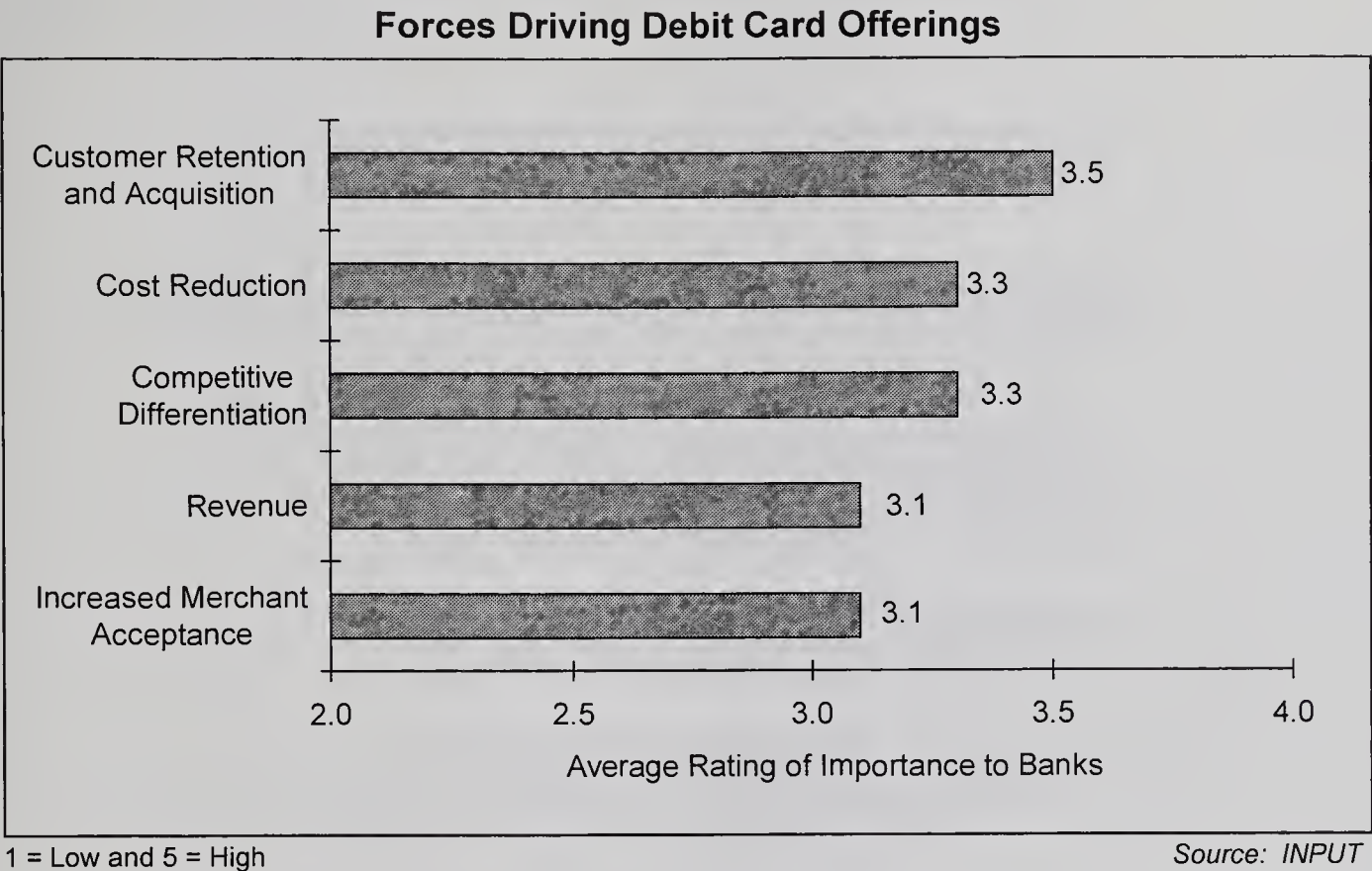
- Supermarkets and gas stations are in the vanguard, and a number of department and clothing stores have shown interest because debit cards involve immediate payment.
- However, some grocery stores give shoppers the option to use debit or credit cards or store cards in POS terminals.

Many consumers express interest in having payment alternatives, although some are concerned about having multiple cards. This may be solved by having a multifunction Smart Card, as discussed in Section C.

b. Market Drivers for Debit Cards

The primary drivers of debit card issuance are competitive differentiation, customer retention, and cost reduction, as illustrated in Exhibit III-32.

Exhibit III-32



According to banks, debit cards can provide competitive differentiation for ATM card offerings since they provide a card that can be used in POS devices at stores to pay for items or to obtain money (in some grocery and other stores).

- This can enhance the relationship with the customer and thereby increase retention rates, according to banks.
- It can also be used to interest prospects for new accounts.

Banks also feel that the use of debit cards will help reduce traffic in branches to cash checks, check volume, and operations costs. Debit cards are also expected to gain revenues (interchange and fees).

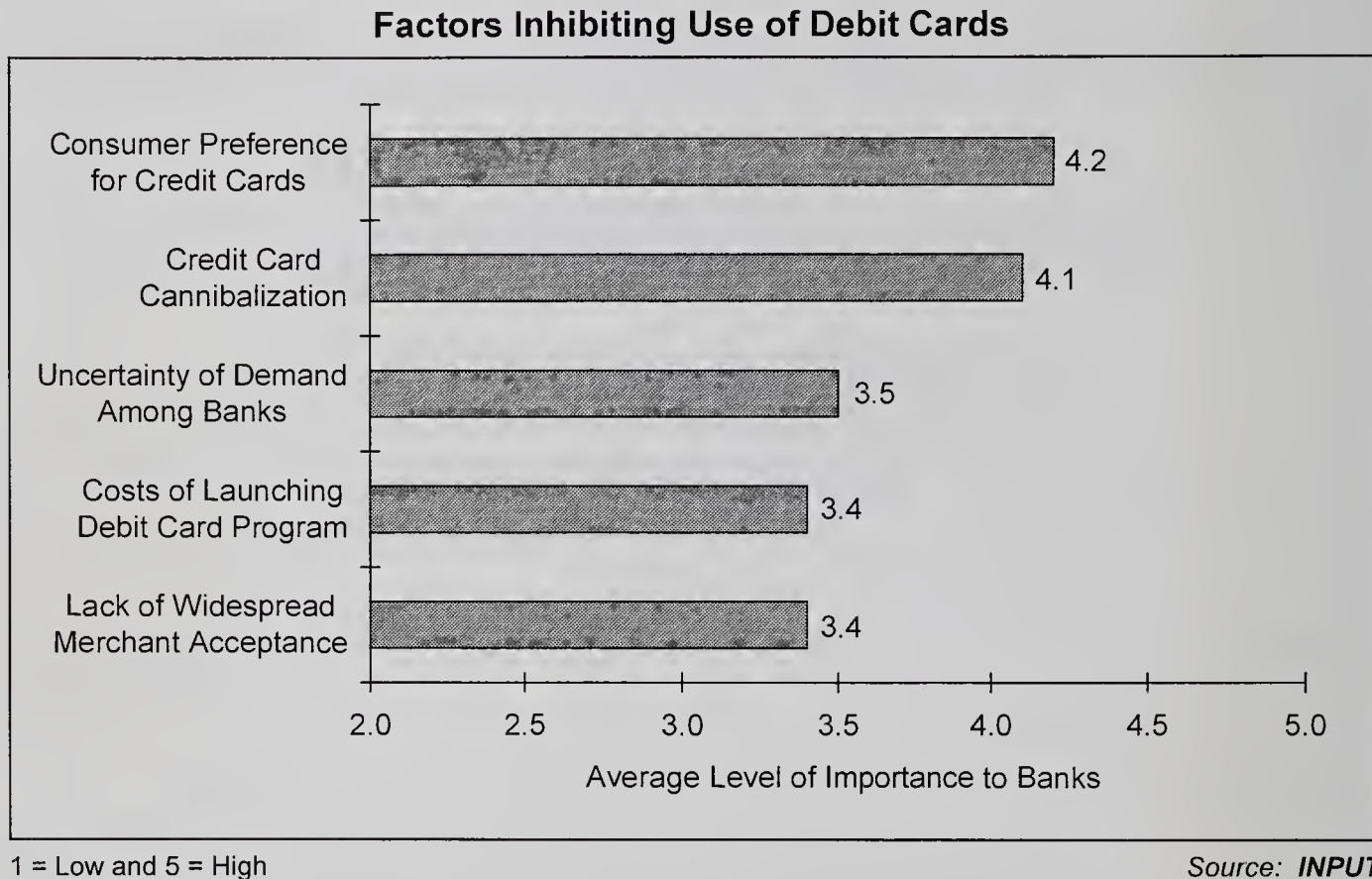
c. Market Inhibitors for Debit Cards

The most significant barriers to debit card issuance are the preference many consumers have for credit cards and fears that banks have about offering debit cards. These obstacles are indicated in Exhibit III-33.

- Credit cards are a much more profitable product for banks than debit cards, and banks fear that debit cards might cannibalize credit volume.

- Banks also fear that efforts to launch debit cards, which might be costly, could fail if enough bank customers were not interested in this product.

Exhibit III-33

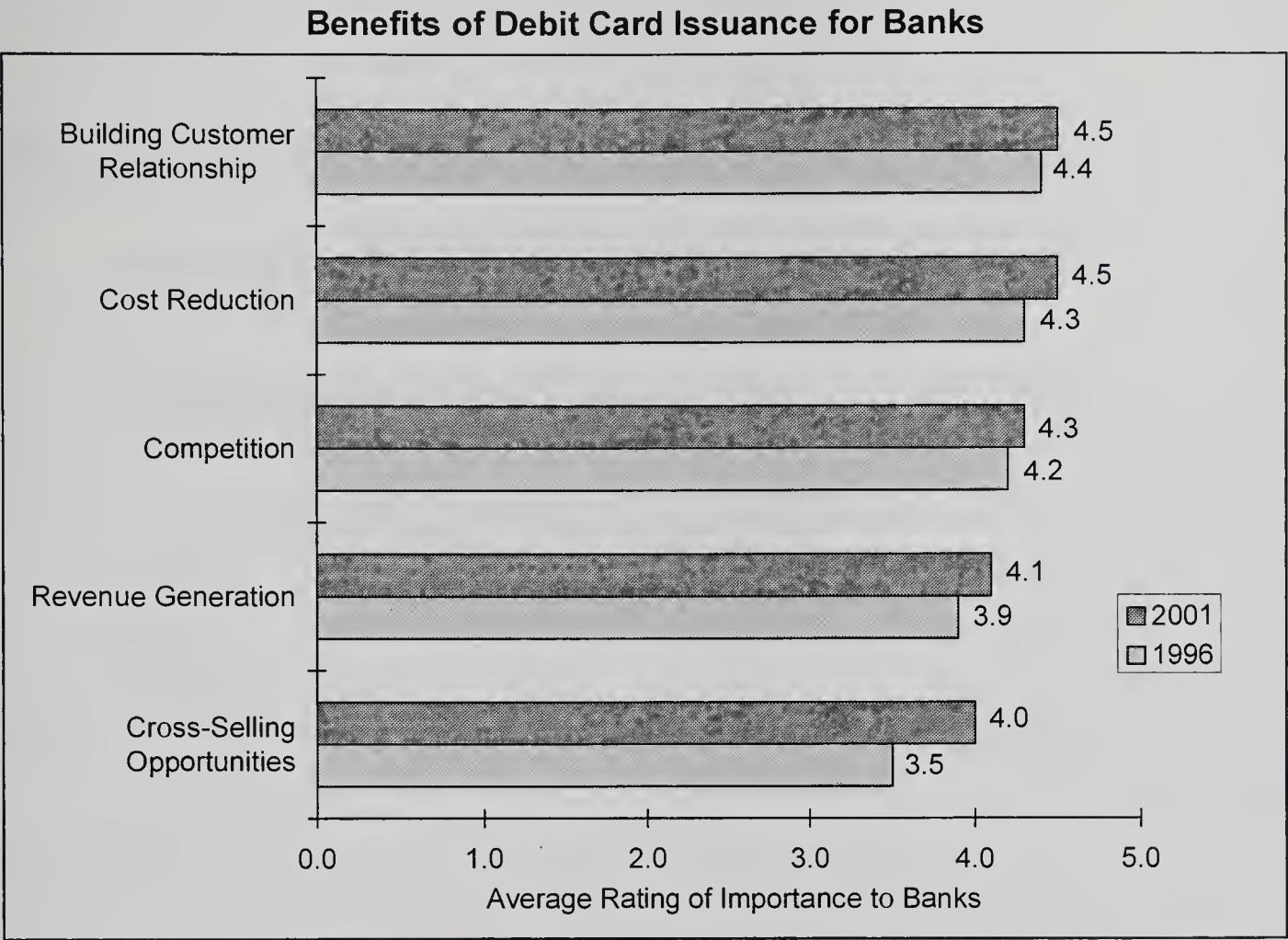


Banks are also concerned about the extent of merchant acceptance in their marketplace as well as the extent of demand among bank customers.

8. Analysis of Debit Card Benefits

Banks view the debit card's primary benefits as creating customer loyalty and displacing the cost of cash and checks, as shown in Exhibit III-34.

Exhibit III-34



Source: INPUT

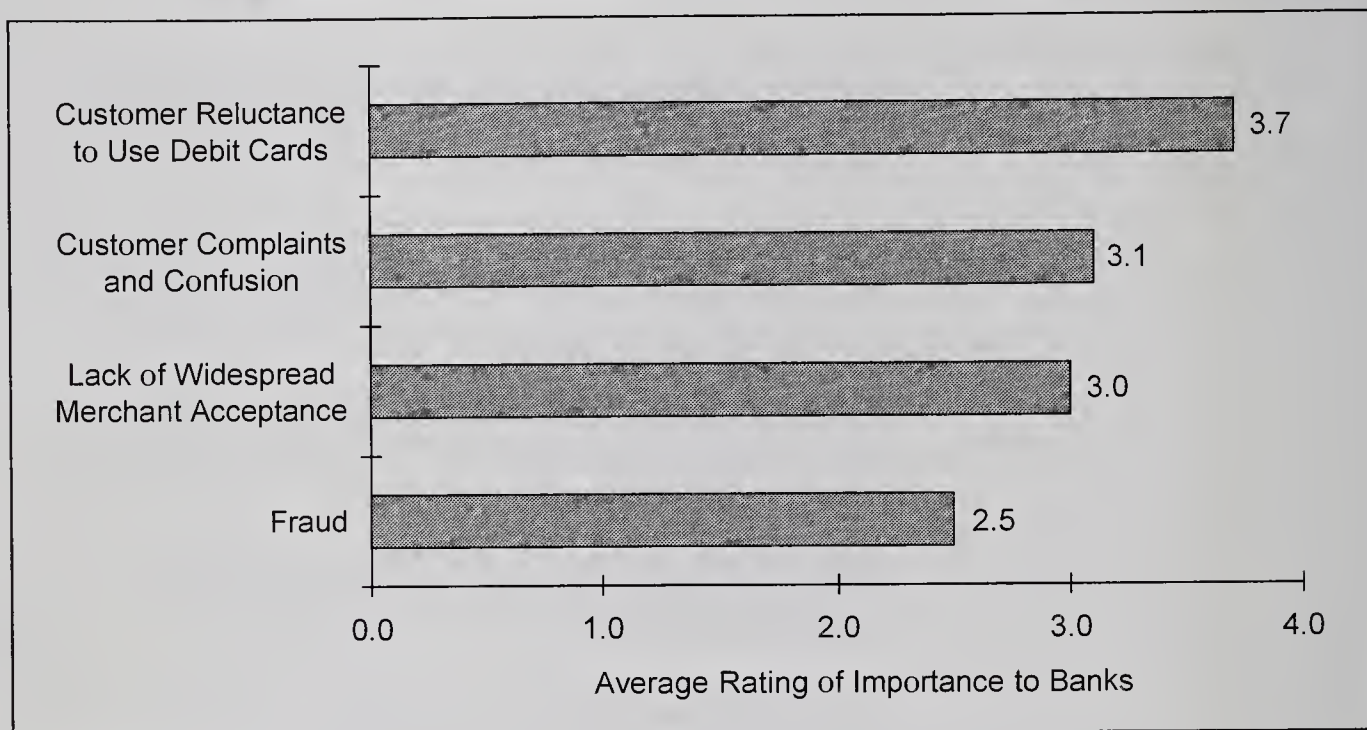
Banks also report they expect debit cards to provide competitive differentiation and generate revenue both from fees related to the cards and from cross-selling opportunities that the product can create.

Some banks also mentioned that they expected the debit card to be succeeded by a universal card with more security that could be used for multiple purposes including access to ATM, credit, debit, and other functions. These banks felt that one of the benefits of debit cards was in moving toward that facility.

9. Possible Problems and Solutions

Banks reported that the major issues associated with debit card offerings revolved around consumer acceptance and usage. These issues are exacerbated by the lack of universal merchant acceptance of debit cards, as illustrated in Exhibit III-35.

Exhibit III-35

Problems Encountered with Debit Card Issuance

1 = Low and 5 = High

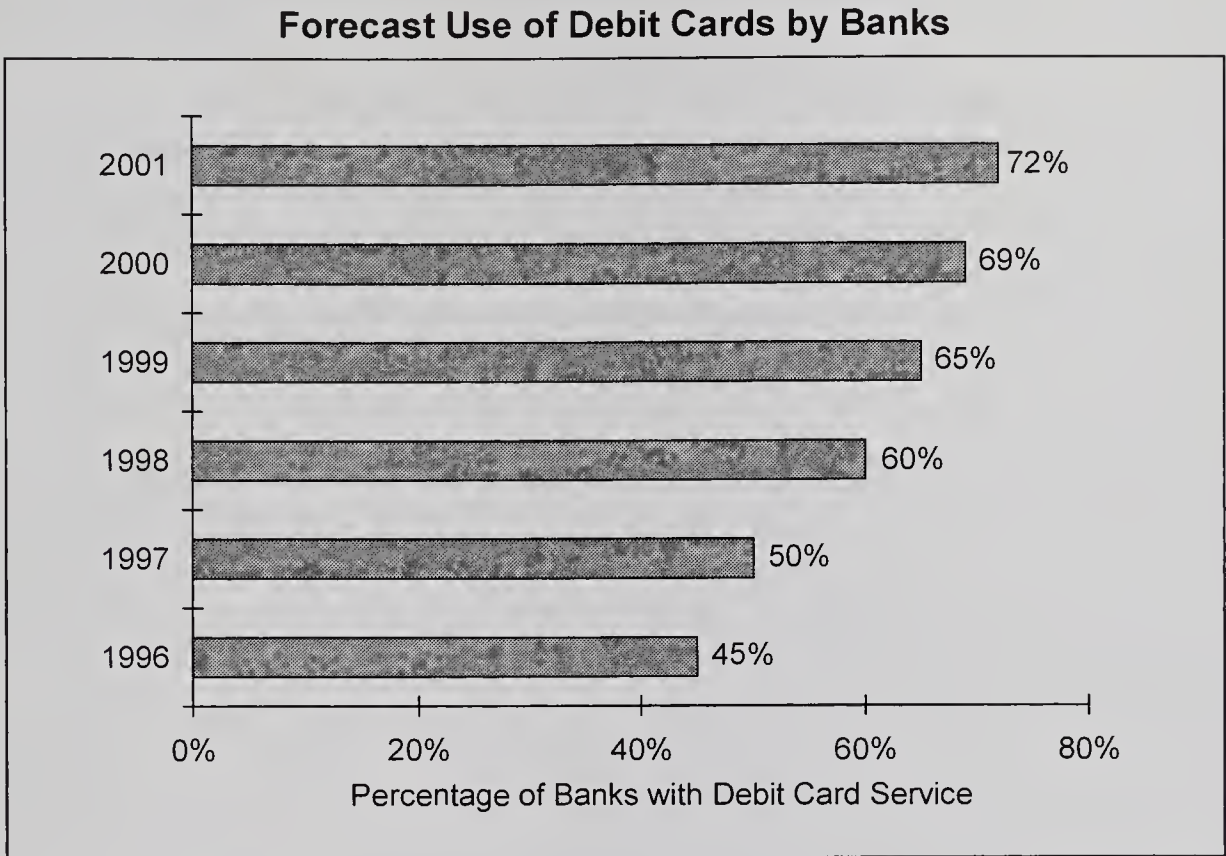
Source: **INPUT**

Banks will need to bolster customer education and assistance programs to ensure that barriers to acceptance and optimal usage are overcome. Brochures or other material are also needed for some merchants. Banks might call on card organizations to send booklets to selected merchants.

10. Forecast of Debit Card Issuance by Banks, 1994-2001

Debit card issuance and use continue to grow. Unlike the market for credit cards, the debit card market is still underpenetrated; penetration is likely to increase substantially beyond current levels, as shown in Exhibit III-36.

Exhibit III-36



1 = Low and 5 = High

Source: INPUT

The above exhibit refers to the percentage of banks that have debit card business, not to the percentage of banks that have a card that can be used as a debit card. The latter would increase the percentage by including banks that have ATM access cards, but do not provide debit card service.

11. Importance of Vendor Products and Assistance

Just as for credit cards, transaction processing services and software to handle account processing are considered very important to debit card issuing banks, as shown in Exhibit III-30 for credit cards. The demand for processing and other services is lower for debit cards, but could increase sharply if interest in debit cards increases as anticipated.

E
Computer-Based Telephone Services

1. Overview

A number of bank respondents reported that computer-based telephone services are being transformed from a pedestrian offering to a key means of supporting or integrating retail electronic banking services.

At present, many banks have telephone bill-paying services that initiate payment to a preapproved list of payees including utility, phone, store, and credit card companies.

- The payer calls his or her bank, uses a password or other means of identification, and gives the number or name on the list to which he wants a payment made and states the amount of payment to be made.
- The payer is able to transfer funds between accounts so that a checking account will have enough money available to make payments or to transfer available funds to a savings account or CD.

Most banks can arrange for some recurring items such as mortgage or insurance payments to be handled with preauthorized debits that will be made automatically each month with no action required on the part of the depositor. However, some payers prefer to pay all bills from the telephone bill-paying account.

A small number of banks have initiated services to supplement telephone bill paying, such as providing information on savings vehicles or bank investment alternatives such as annuities or mutual funds. The most aggressive set of additions to telephone bill paying started in England with the initiative of the First Direct Bank. This offering is being emulated by some large banks in the U.S., including Citibank and Chase.

- Banks interested in or offering this service report that the phone agent will have more training and information available through on-line access to customer files than is offered with traditional pay-by-phone agents.
- The agent will be able to access recent activity of the customer, as well as balance and transaction data, while helping a customer plan transfers of balances, payments, and investments in a CD or fund.
- The customer can hang up if something comes up and resumes the conversation later, even if a different agent is handling the call, since the details of the previous call can be accessed. This form of retail electronic support gives a customer the impression of getting attention from the same person.
- The phone agents can also point out to customers that they could save money on credit card payments, for instance, by getting a card with a lower rate of interest such as that offered by their bank.

A number of banks are now upgrading their pay-by-phone services to offer some or all of the capabilities mentioned above. INPUT will refer to this type of service as a "computer-based telephone service" because it is

dependent on computer access to information in customer accounts and previous contact history.

As pointed out by Andersen Consulting, a retail bank customer will be able to conduct home banking transactions, phone a bank agent during the day from the office or airport to check balances in real time, and enter on-line instructions for purchases or sales of equities through a bank or the Internet. This illustrates the link that computer-based telephone services can provide in the future. They can also provide other types of support to retail electronic banking services.

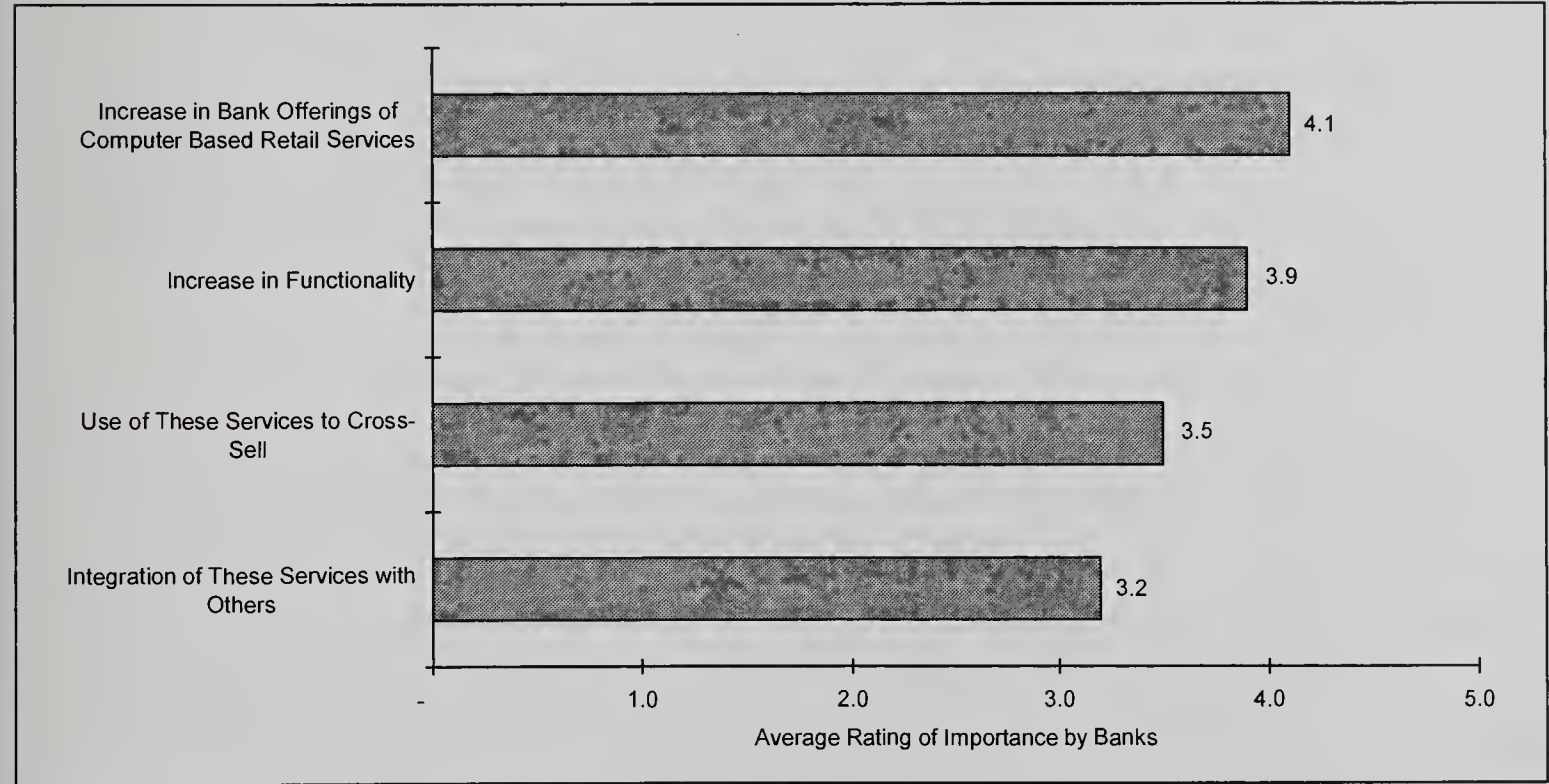
2. Trends, Drivers, and Inhibitors for Computer Based Telephone Services

a. Trends

Leading trends in this market reported by bank respondents are an increase in offering pay-by-phone services and an increase in the capabilities of phone services, as shown in Exhibit III-37.

Exhibit III-37

Trends In Use of Computer-Based Telephone Services



1 = Low and 5 = High

Source: INPUT

- A number of banks report that use of computer-based telephone services is growing. Some banks show a high level of interest in the use of these services to sell or support other services including home banking.

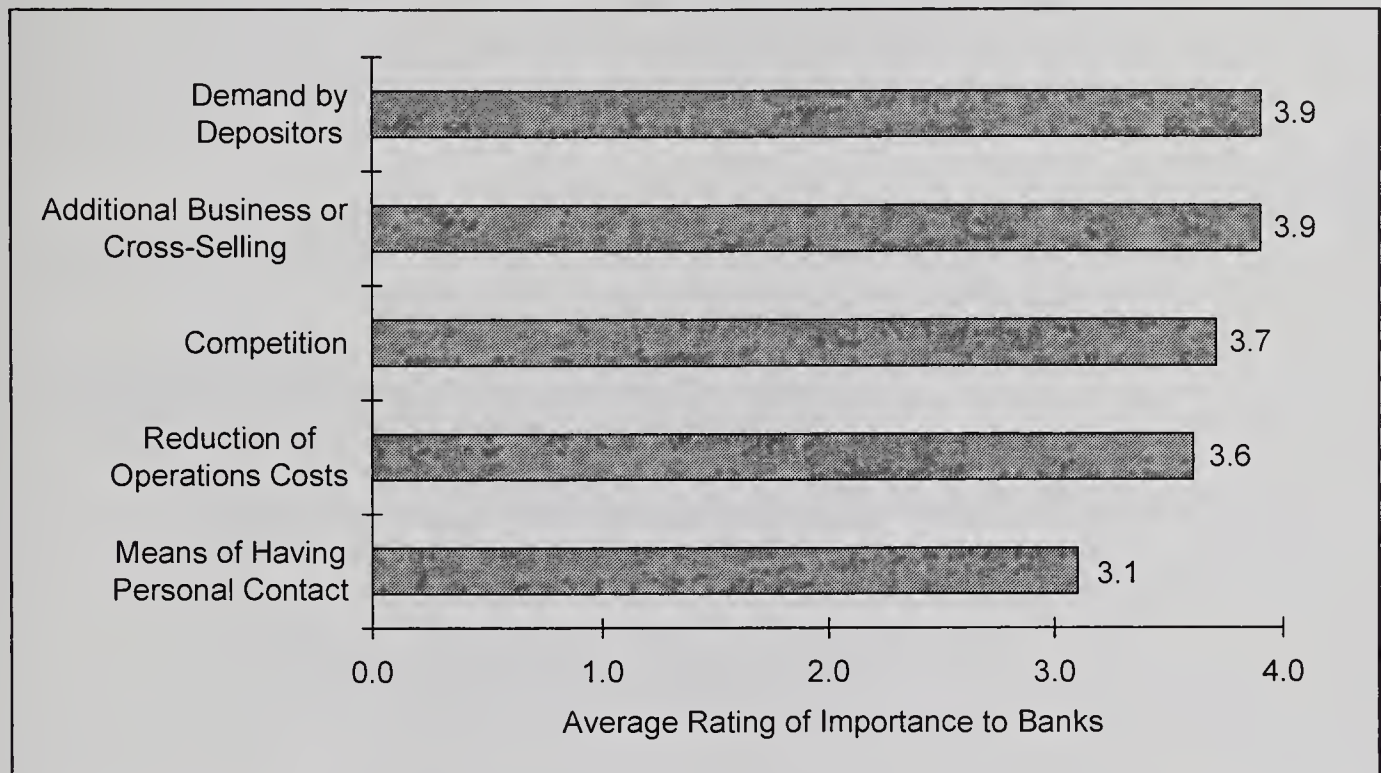
- As suggested by Andersen Consulting, phone-based services can be accessed while a home banking user is at work or traveling to provide follow-up or check results. Some executives are now using a portable PC to conduct "home banking" services while on the road, but it is much easier to access a phone while in transit or after business dinners to transfer balances or make an urgent payment, according to reports of several banks that have been exploring applications with pilot customers.
- The use of the computer-based telephone capability can allow reporting on the status of home banking-initiated transactions or investigation of problems, including problems or delays in ATM deposits or other retail actions. The integration of retail capabilities is one of the trends anticipated by banks in relation to increasing phone service capabilities.
- Several banking consultants suggested that the interest in telephone services is really a reaction to another trend, the reduction of branches or cut back in branch support underway at some banks.
- Some depositors react to reduced branch services by turning to telephone services,
- Banks try to counteract downsized support in branches by promoting phone services, use of ATMs and home banking.

b. Market Drivers

Banks mention ease of use for depositors and meeting their demands as well as competition and the possibility of reducing costs as drivers for telephone services. These drivers are illustrated in Exhibit III-38.

Exhibit III-38

Forces Driving Computer-Based Telephone Services



1 = Low and 5 = High

Source: INPUT

One of the interesting factors mentioned by a group of larger banks, including NationsBank, was the desire of some depositors for personal contact with bank personnel.

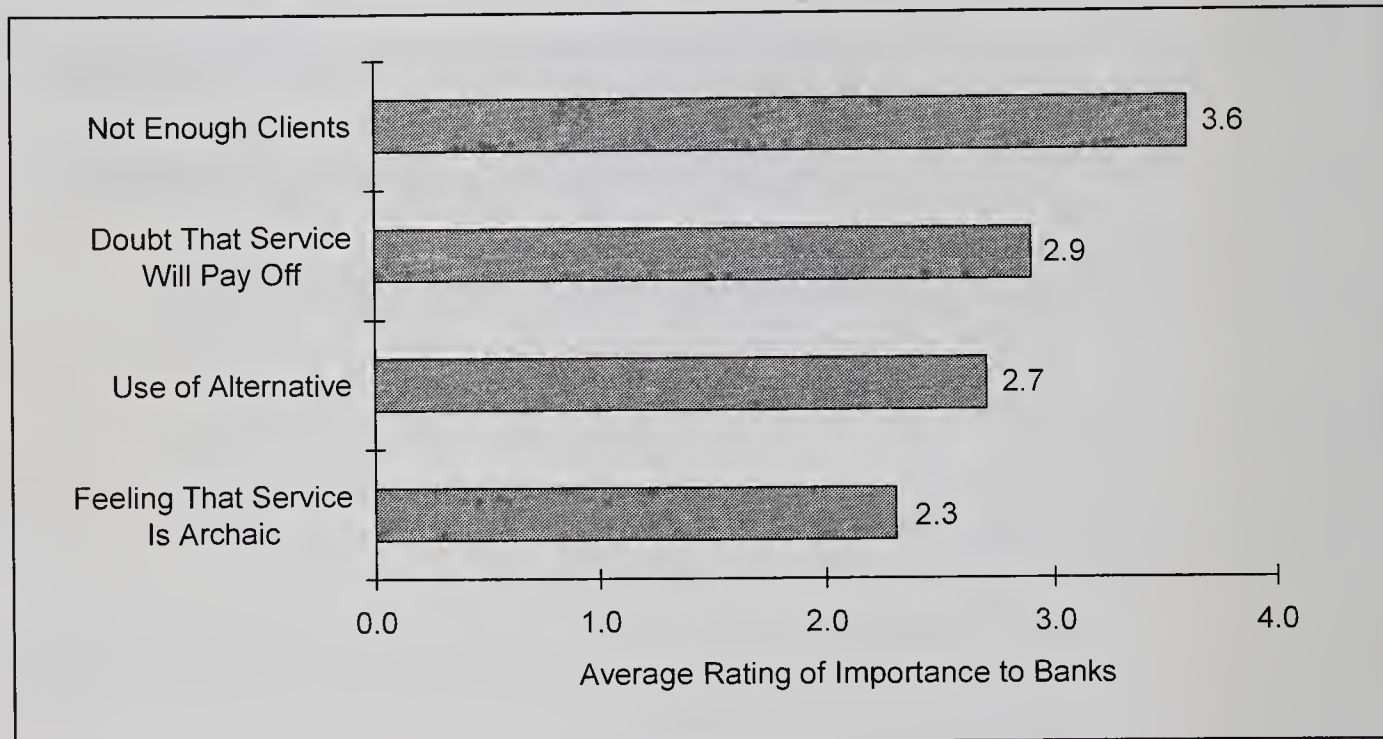
- Research on the reasons why some depositors made needless extra contacts with bank agents handling phone service, to get balance data again and again or check or ask about instructions they had just been given, revealed that they wanted to talk with the agents.
- Those confined at home, elderly, or unsatisfied with visits to remote, crowded branches found the personal contact involved with telephone services to be a valuable aspect of service.
- Some depositors also said that they phoned telephone services to discuss problems with home banking and make payments by phone when necessary.
- One use of the computer-based telephone service mentioned by a spokesman at Citibank was the ability to overcome the aggravation that clients of home banking may feel at times.

c. Market Inhibitors for Telephone Services

As illustrated in Exhibit III-39, a number of banks hesitate to offer telephone services for two related reasons: they feel that there will be a lack of sufficient users to make the service pay for itself and they feel that the service is too expensive to set up unless there are a large number of users.

Exhibit III-39

Factors Inhibiting Computer-Based Telephone Services



1 = Low and 5 = High

Source: INPUT

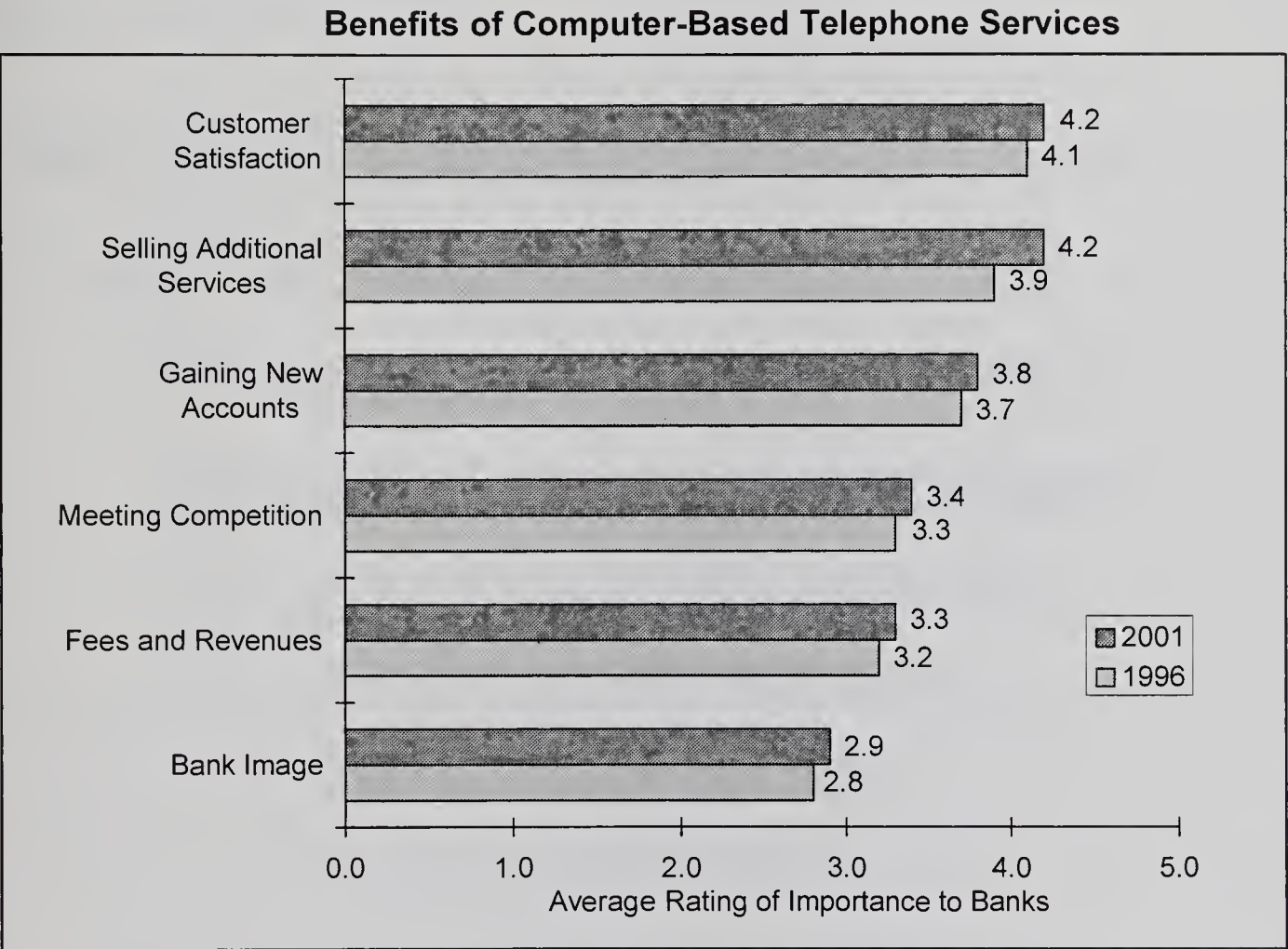
Several vendors active in implementing and supporting telephone services stated that the lack of consumer acceptance is often because banks have not performed research on the features or methods that would be appealing to their depositors.

The service mentioned as an alternative most often by banks was home banking. Several banks said that they considered home banking a step ahead of telephone-based services. However, some large banks report that computer-based telephone services will be used as a supplement and aid with home banking.

3. Analysis of Benefits of Computer-Based Telephone Services

Banks report satisfaction of depositors and opportunities to sell additional services as more important benefits of these services than revenues and fees, as indicated by Exhibit III-40.

Exhibit III-40



1 = Low and 5 = High

Source: INPUT

By 2001, banks expect to use computer-based telephone services to make more of an impact in selling additional business. Several large banks emphasized that this will not be inconsistent with offering more electronic services such as home banking or Internet-based services.

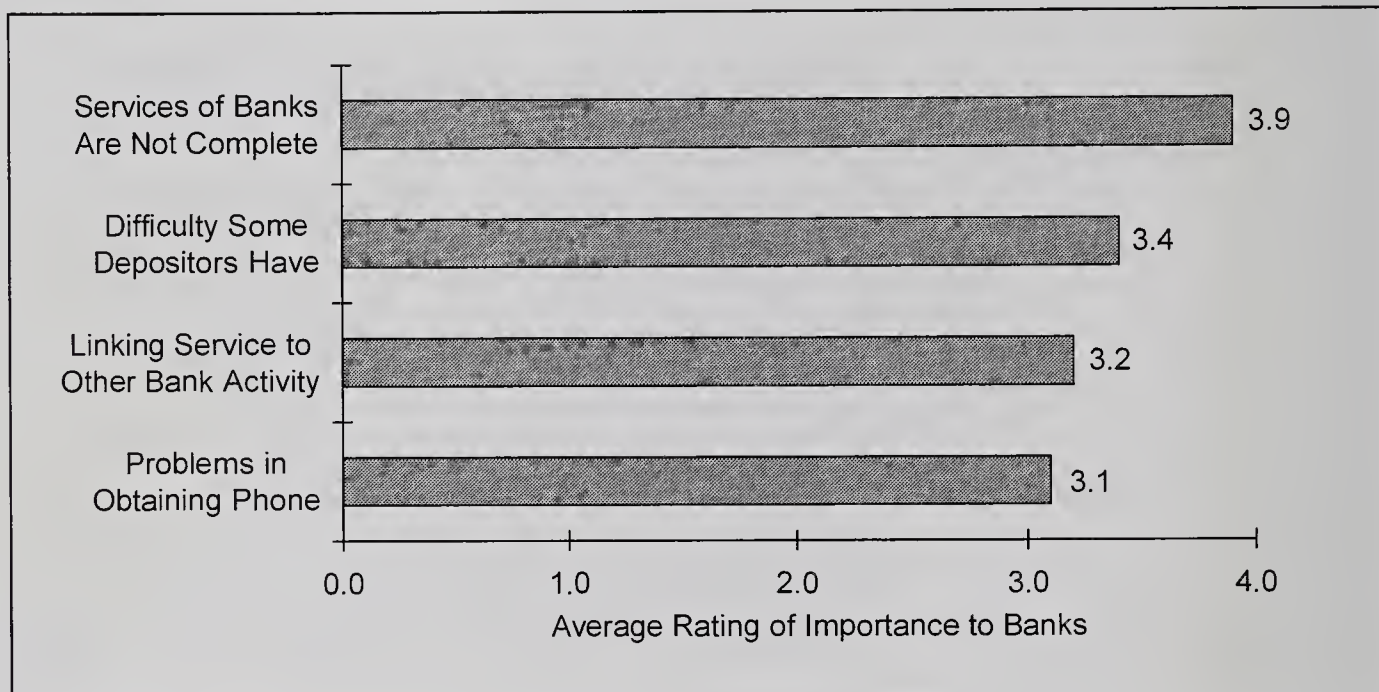
- It will be a necessary addition to home banking and Internet-based services, enabling bank customers to solve problems and gain additional information in a structured way without visiting or calling personnel at branches, according to these banks.
- The bank agents using computer-based telephone services will have access to an increasing amount of on-line customer account detail and financial information.

4. Possible Problems and Solutions

Problems that bank respondents report in relation to computer-based telephone services focus on complaints of depositors who use the service, as shown in Exhibit III-41.

Exhibit III-41

Problems Encountered with Computer-Based Telephone Services



1 = Low and 5 = High

Source: INPUT

Banks report that customers may not be satisfied with the set of capabilities banks want to offer.

- Although banks have spelled out what is offered, customers may ask for capabilities that have not been provided, such as initiating recurring payments through the telephone service or getting detail on bank transactions.
- Customers may also want to have capabilities such as aid in balancing their account provided to them, as noted by Deloitte & Touche, a firm that consults on telephone services of banks, and there may not be satisfactory methods of providing the capabilities desired.

Banks point out that they can encounter problems in setting up a helpful, user-friendly system and hiring personnel who will make good phone agents.

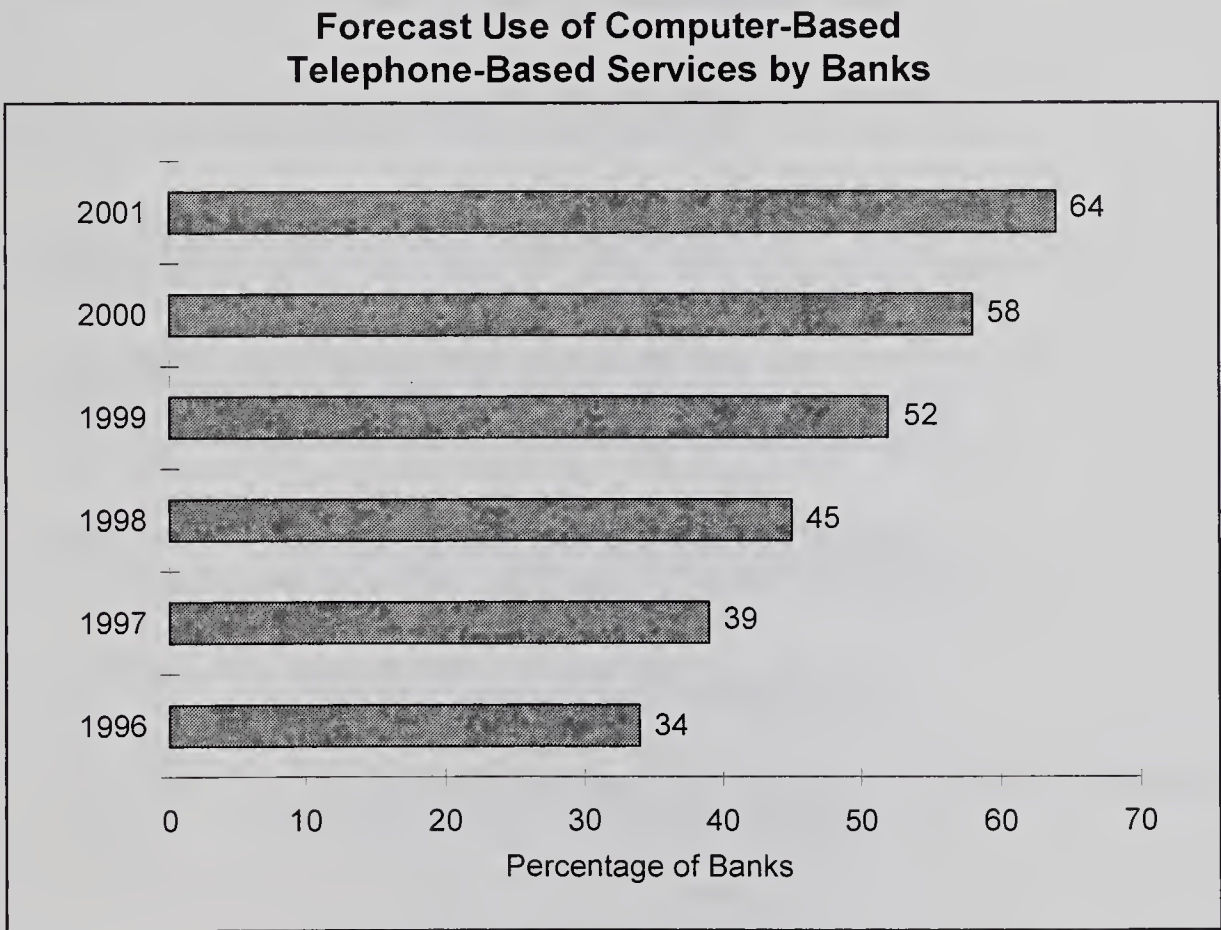
- Several banks noted that a plan for hiring and training personnel has to be developed to solve problems with phone agents and to aid with user problems.

- One of these banks said it was necessary to get aid from consultants that had experience with telephone services to address the issues of training and planning for these services.

5. Forecasts Use of Computer-Based Telephone Services by Banks, 1996-2001

The use of telephone services and participation in offering these services by banks continues to grow. As shown in Exhibit III-42, the percentage of banks and savings institutions offering these services will grow rapidly in the near future and slow down slightly toward the end of the planning period. The compound annual growth rate will be about 10%.

Exhibit III-42



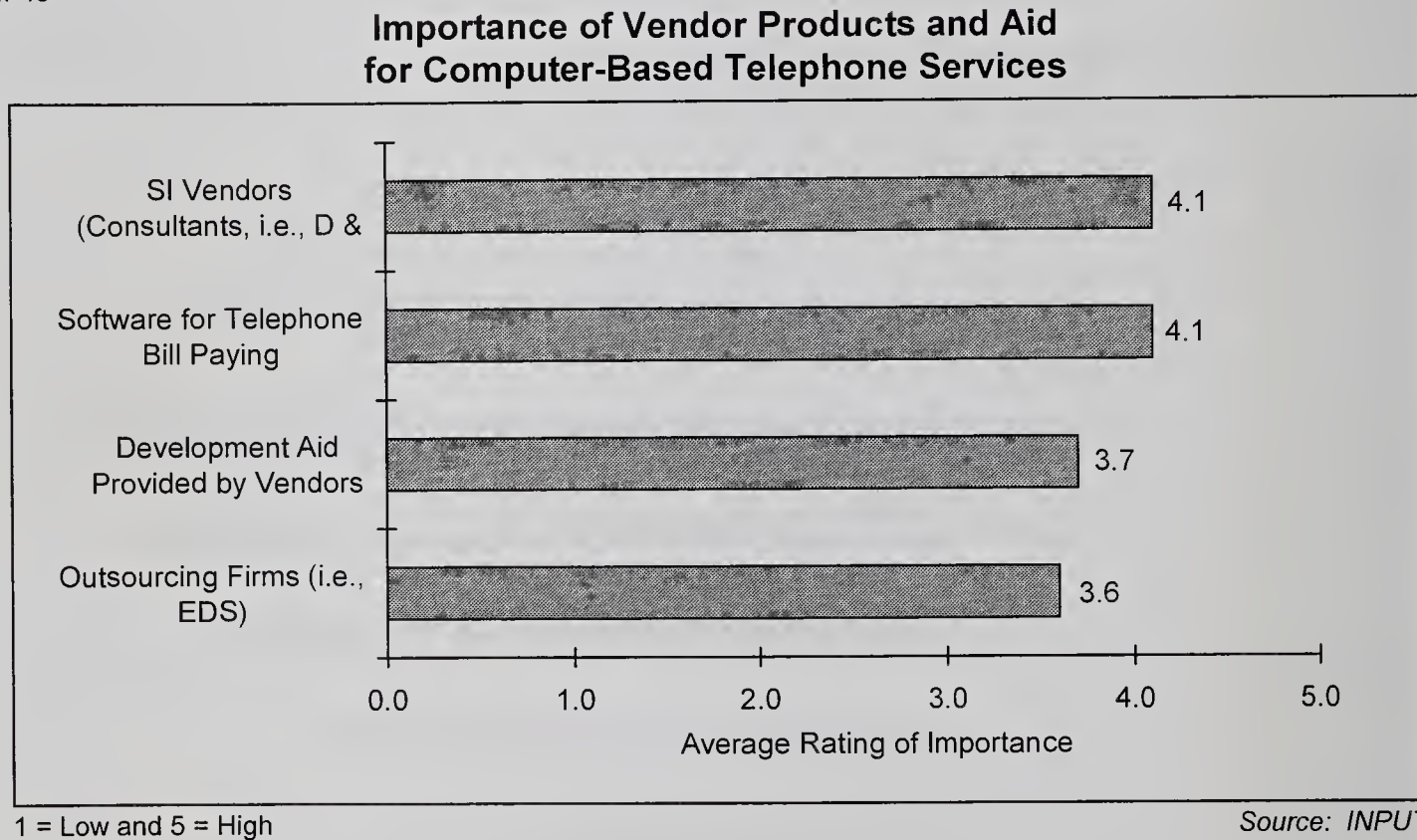
1 = Low and 5 = High Source: INPUT

Banks do not feel that penetration will reach a very high level since banks focusing on corporate business, subsidiaries of foreign banks, and smaller community banks will be less likely to offer the service. However, some small community banks such as Quakertown Bank in Pennsylvania are advocates of proactive telephone services to increase retail business.

6. Importance of Vendor Products and Assistance

A number of banks offering or planning telephone services report ongoing needs for consulting services, software products, SI, or professional services to develop or upgrade software and outsourcing to aid in supplying a phone service offered to customers. The leading types of aid mentioned by banks are listed in Exhibit III-43.

Exhibit III-43



F

Remote Lending, Mortgage, and Investment

1. Overview

The growing popularity of the Internet and the use of network service providers such as Prodigy, CompuServe and America Online have developed interest in selling banking and financial services to people who use network capabilities. Many of these people are inclined to buy services and products on networks, and their financial resources are above average.

- Home banking systems, financial advisory services, investment opportunities, and use of on-line databases of financial information, among other services, have been sold to these consumers via networks.

- Banks report that they are very interested in exploring opportunities for selling lending, mortgage, and investment products to this market.

Some banks have already begun to market or plan services and products in these areas. Wells Fargo has supplemented its popular home page, The Wild West, with a page of instructions on how to apply for a loan. Bisys is offering banks a means of economically marketing mutual funds on the Internet.

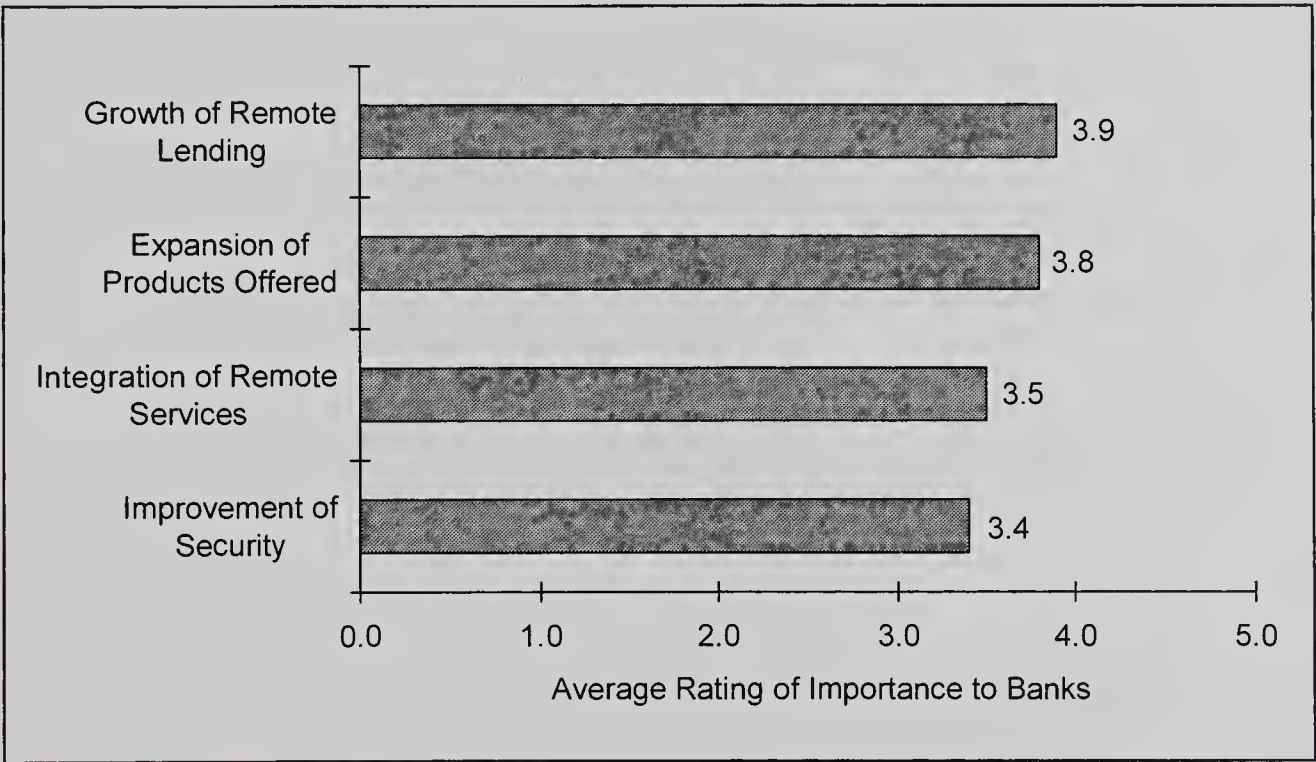
Other on-line means of marketing loans, mortgages, and investment opportunities are also being explored. Some types of loans and investments are now being sold through ATMs, as noted in section B. A device similar to an ATM is being offered to handle certain types of personal loans.

2. Trends, Drivers, and Inhibitors for Remote Lending, Mortgage, and Investment

Despite the small size of these services at present, there is a discernible trend for their growth as indicated in Exhibit III-44.

Exhibit III-44

Trends Reported for Remote Lending, Mortgage, and Investment



1 = Low and 5 = High

Source: INPUT

Banks not only expect remote services to grow, but report that they will become integrated with other services and have improved security over time. Banks report that integration is necessary in order to post customer accounts and service customer requests.

a. Market Drivers for Remote Lending, Mortgage, and Investment

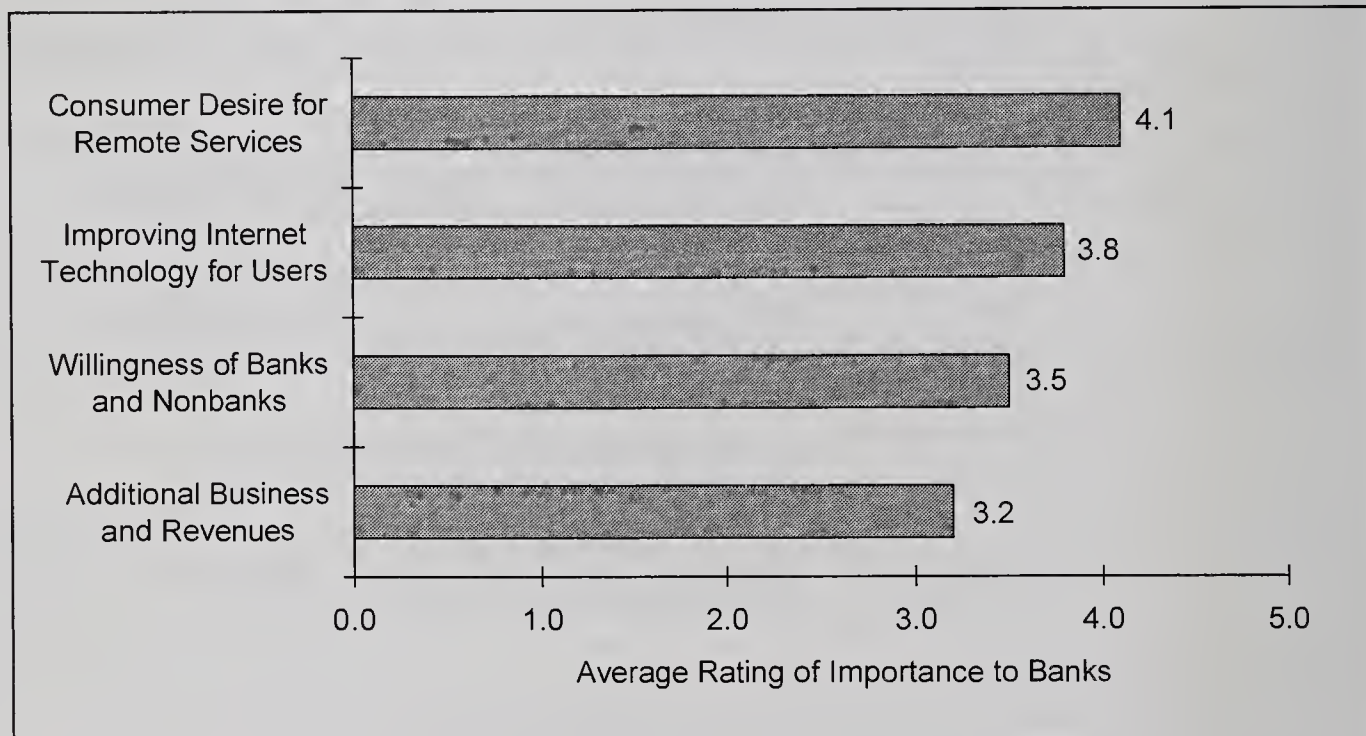
Banks report that consumers are driving the use of remote lending, mortgage, and investment services.

- Consumers, or a segment of them, want access to more bank services on a remote basis in order to save time and conduct personal financial activities at more convenient locations.
- The segment of consumers who use network capabilities, including the Internet or network services such as America Online, are willing to buy lending, investment, and even insurance products on-line and have substantial funds available.

As shown in Exhibit III-45, bank respondents feel these consumer drivers are accompanied by the willingness of a number of banks or nonbanks to offer remote services.

Exhibit III-45

Forces Driving Remote Lending, Mortgage, and Investment



1 = Low and 5 = High

Source: INPUT

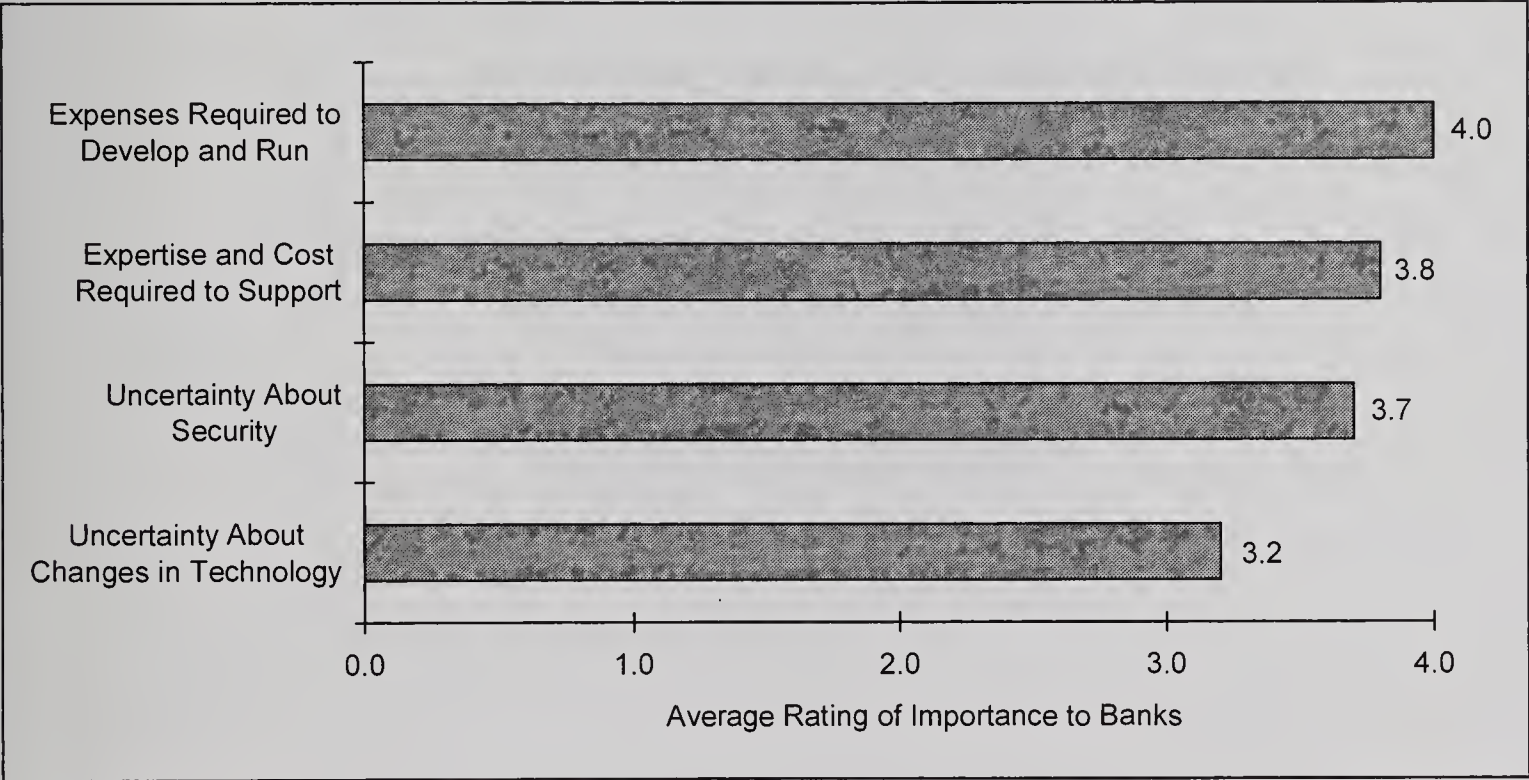
The willingness of some banks or nonbanks to offer remote lending, investment, or other services makes banks that have not decided to offer these services feel that they might suffer from competition. In addition, banks feel that these services could offer opportunities to develop a new market for retail services in general by bringing the bank to the attention of an attractive group of prospects.

b. Market Inhibitors for Remote Lending, Mortgage, and Investment

The inhibitors mentioned most often for remote lending, mortgage, and investment services are concerns about development and support costs, technology, and security, as indicated in Exhibit III-46.

Exhibit III-46

Factors Inhibiting Use of Remote Lending, Mortgage, and Investment



1 = Low and 5 = High

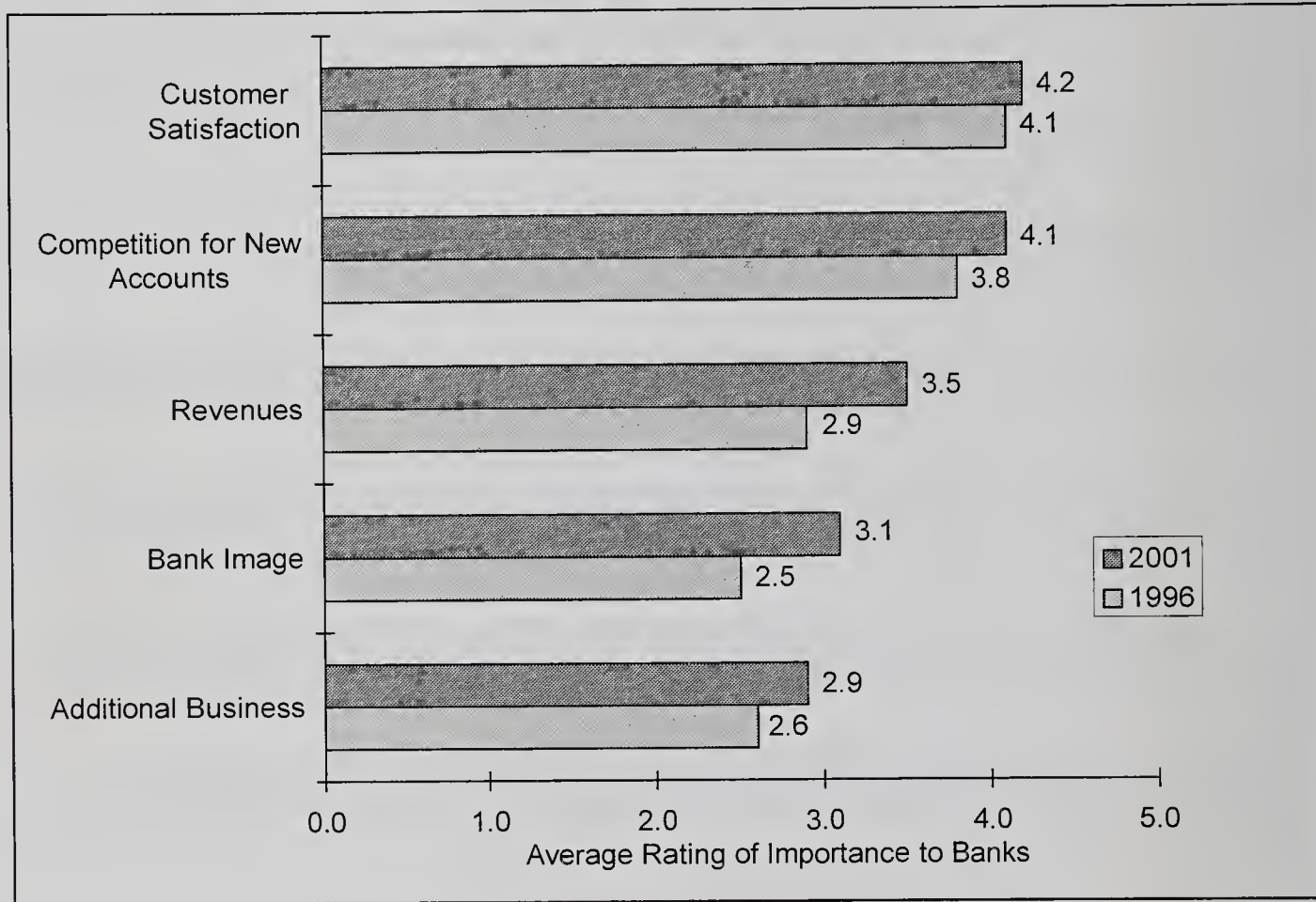
Source: INPUT

Bank respondents report that there will have to be more understanding of the technology and costs that could be involved as well as improvements in security before many banks will implement systems.

3. Analysis of Benefits

Although banks report that their chief benefits from remote lending, mortgage, and investment offerings will be satisfaction of customers and meeting competitive moves, there is also an expectation that these services will generate additional business and revenues, as shown in Exhibit III-47.

Exhibit III-47

Benefits of Remote Lending, Mortgage, and Investment Services

Source: INPUT

Banks do feel that these types of services will bring in revenue and additional business, particularly by 2001. They are also expected to be increasingly important in promoting the image of the bank.

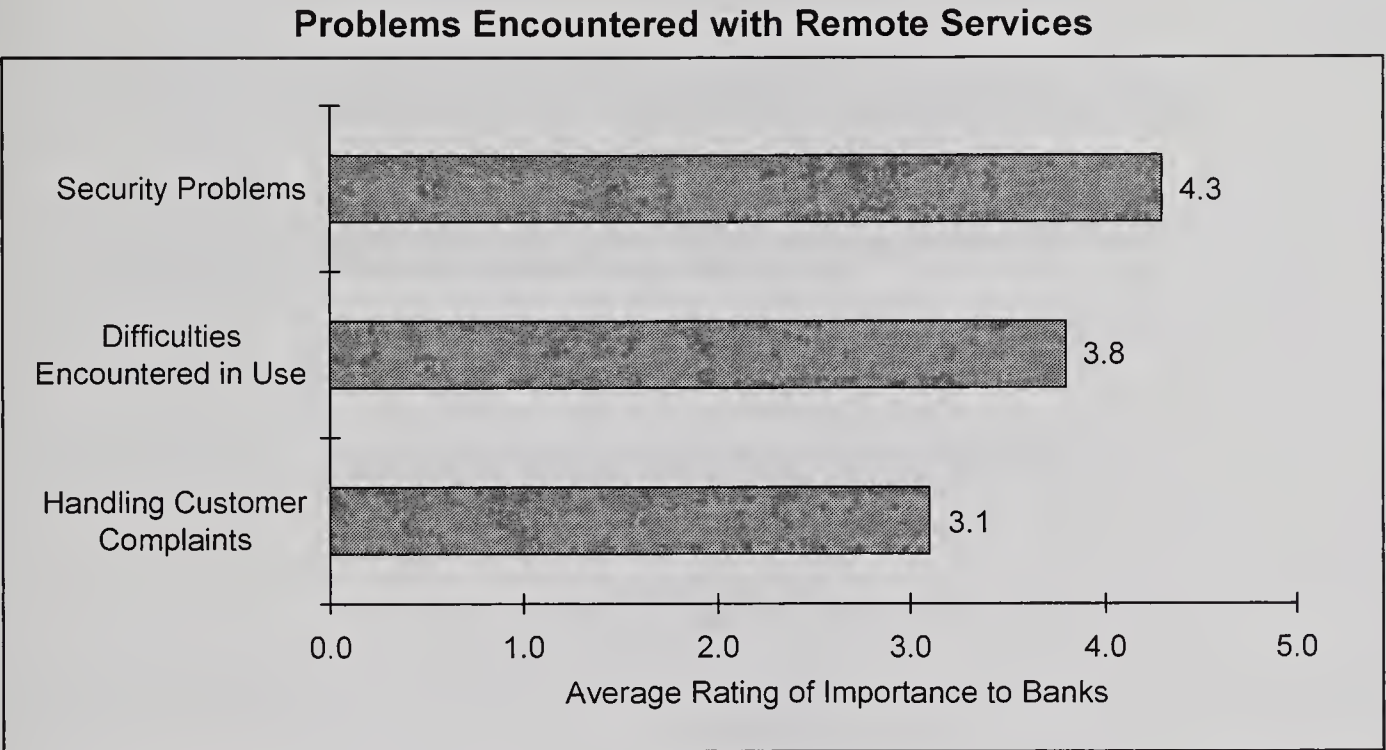
The additional business could be expansion of the services noted to include annuities or investment advice, as well as other products. For instance, people interested in obtaining or activating a credit line in the future might open DDA accounts with the bank.

Several banks also felt that developments in products such as bidding for attractive mortgage or lending business (reverse auctions) would be facilitated by offering remote lending and mortgage products.

4. Possible Problems and Solutions

Although there is little experience for banks to use in exploring problems, there is a general feeling that security and difficulties in using services are the major problems that will be encountered, as shown in Exhibit III-48.

Exhibit III-48



1 = Low and 5 = High

Source: INPUT

Banks are not only thinking of security needs in relation to possible fraudulent activities that might be encountered. They are also concerned about accidents or actions of hackers that might be embarrassing in relation to the types of services being considered. One banker mentioned that transactions for ridiculous amounts or names had been mentioned in regard to early on-line services in newspapers and magazines in the past.

Several banks planning remote services stated that it was necessary to conduct research and/or use consultants to predict and analyze potential problems and complaints from customers. If there were not adequate answers to them, services should be delayed.

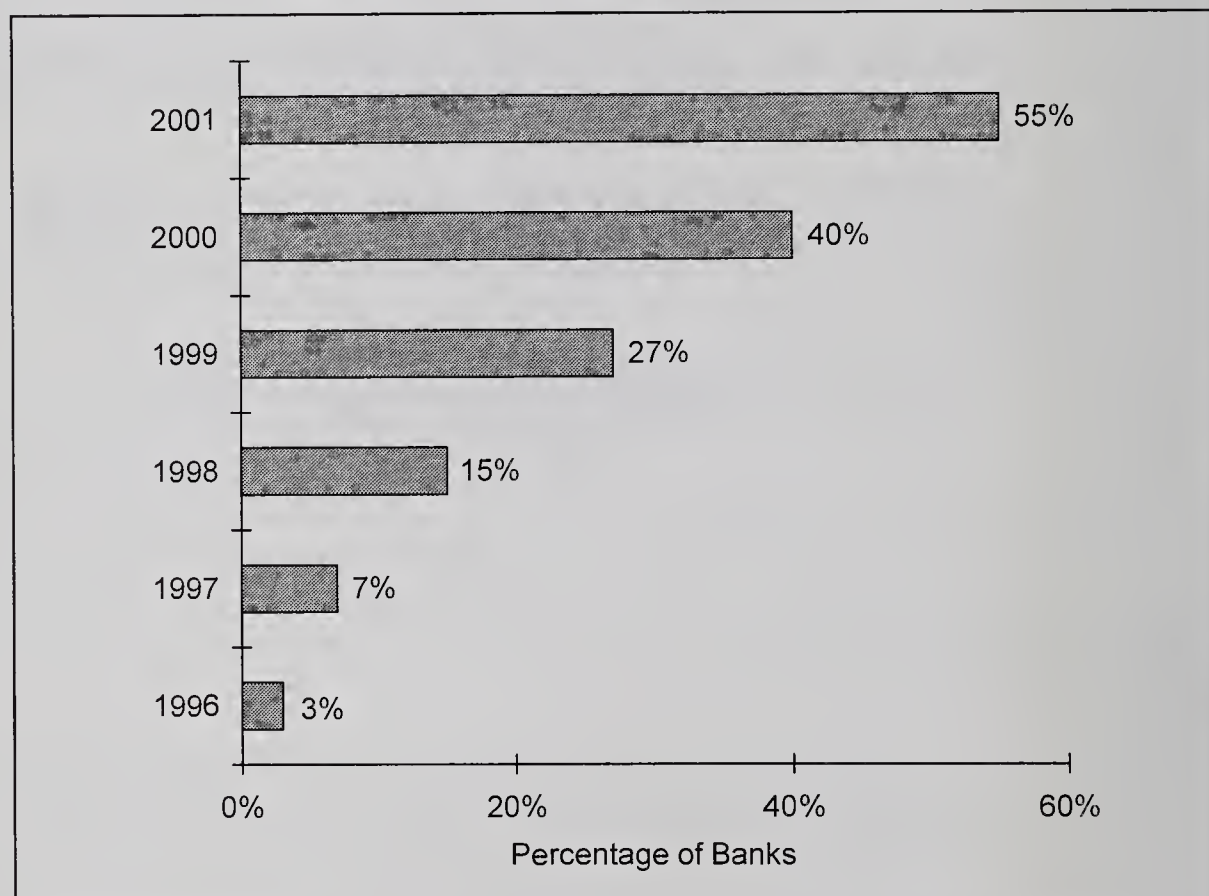
Vendors interested in supporting remote services felt that consulting should be undertaken, and they also felt that services might need to be limited to certain types of loans and investments to guard against problems and customer sensitivity.

5. Forecast Use of Remote Lending, Mortgage, and Investment Services by Banks, 1996-2001

Due to the fact that these services are used or planned by a small percentage of banks at present, the penetration of banks forecast in Exhibit III-49 is based on preliminary data.

Exhibit III-49

Forecast Use of Remote Lending, Mortgage and Investment Services by Banks



1 = Low and 5 = High

Source: INPUT

6. Importance of Vendor Products and Assistance

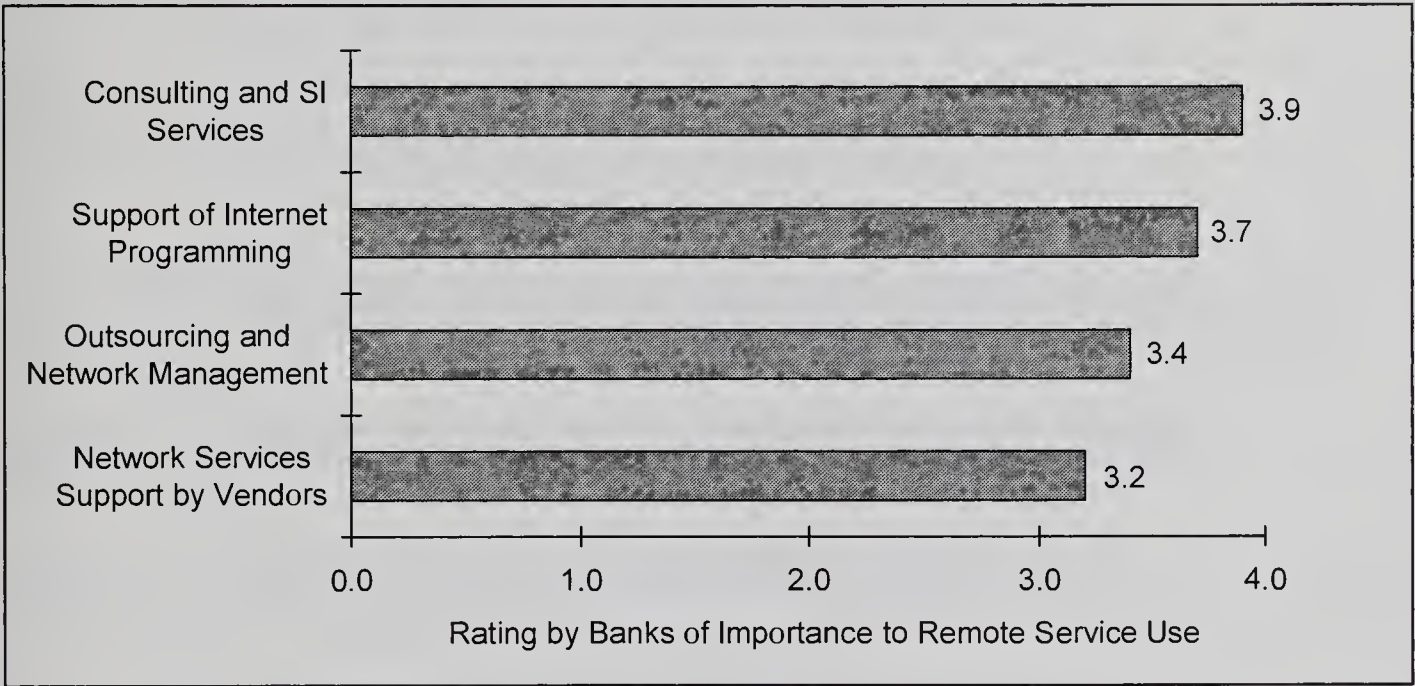
The growth of remote Internet services will require aid and products from information services vendors, according to banks.

- They feel that new software products that enable users to develop and change home pages and other material on the net will be essential for the remote services being described.
- Some banks also feel that vendors offering professional or systems integration services will be needed to help launch or upgrade services. Several banks thought that these remote services or support for them would also be supplied by outsourcers.

The types of services banks expect to use are summarized below in Exhibit III-50.

Exhibit III-50

Importance of Vendor Products and Aid for Remote Lending, Mortgage, and Investment



1 = Low and 5 = High

Source: INPUT

G Other Remote Retail Electronic Banking Services

1. Overview of “Other” Services

Bank respondents mentioned other services that might be offered on the Internet or by network service providers as part of retail electronic banking. These included insurance products, which they thought banks would be permitted to offer in the future, as well as retail trust, retail cash management, and bill receipt and instruction for payment service that some banks are considering of as an enhancement to home banking.

- The retail trust service involves delivering and receiving messages and instructions by E-mail and having financial and general information available through the Internet to help trust clients initiate an action.

- The handling of bills and instructions for payment responds to a problem identified by a number of retirees and other consumers who travel frequently. The service would involve an examination of bills received by a depositor in a lock box and payment of the bills according to standing instructions (similar to preauthorized debits) or forwarding of specified payment information to the depositor by Internet or a network service and responding to payment instructions from the depositor.

The popularity of the Internet is encouraging a number of banks and vendors to think of additional services that can be added to Internet services in the future.

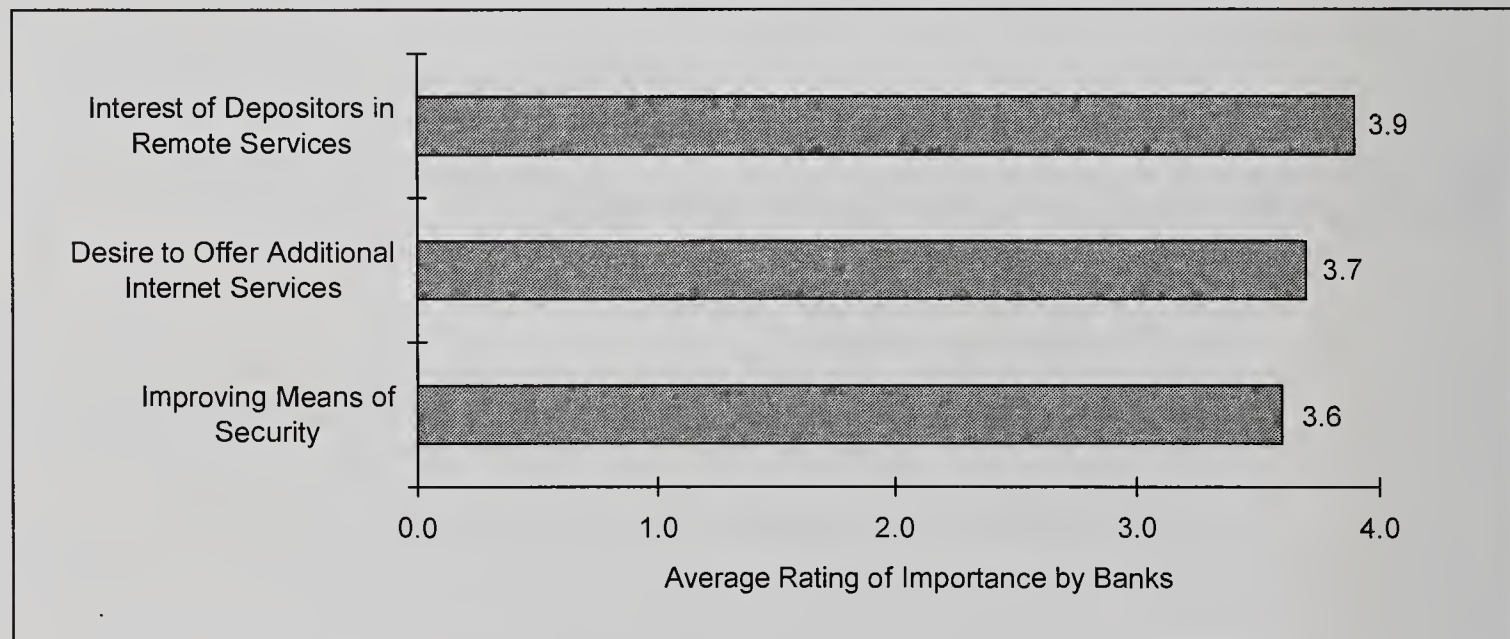
2. Trends, Drivers, and Inhibitors for “Other” Services

a. Trends

According to bank respondents, additional types of remote services can be expected to increase due to demands of consumers, as shown in Exhibit III-51.

Exhibit III-51

Trends in Use of “Other” Services



1 = Low and 5 = High

Source: INPUT

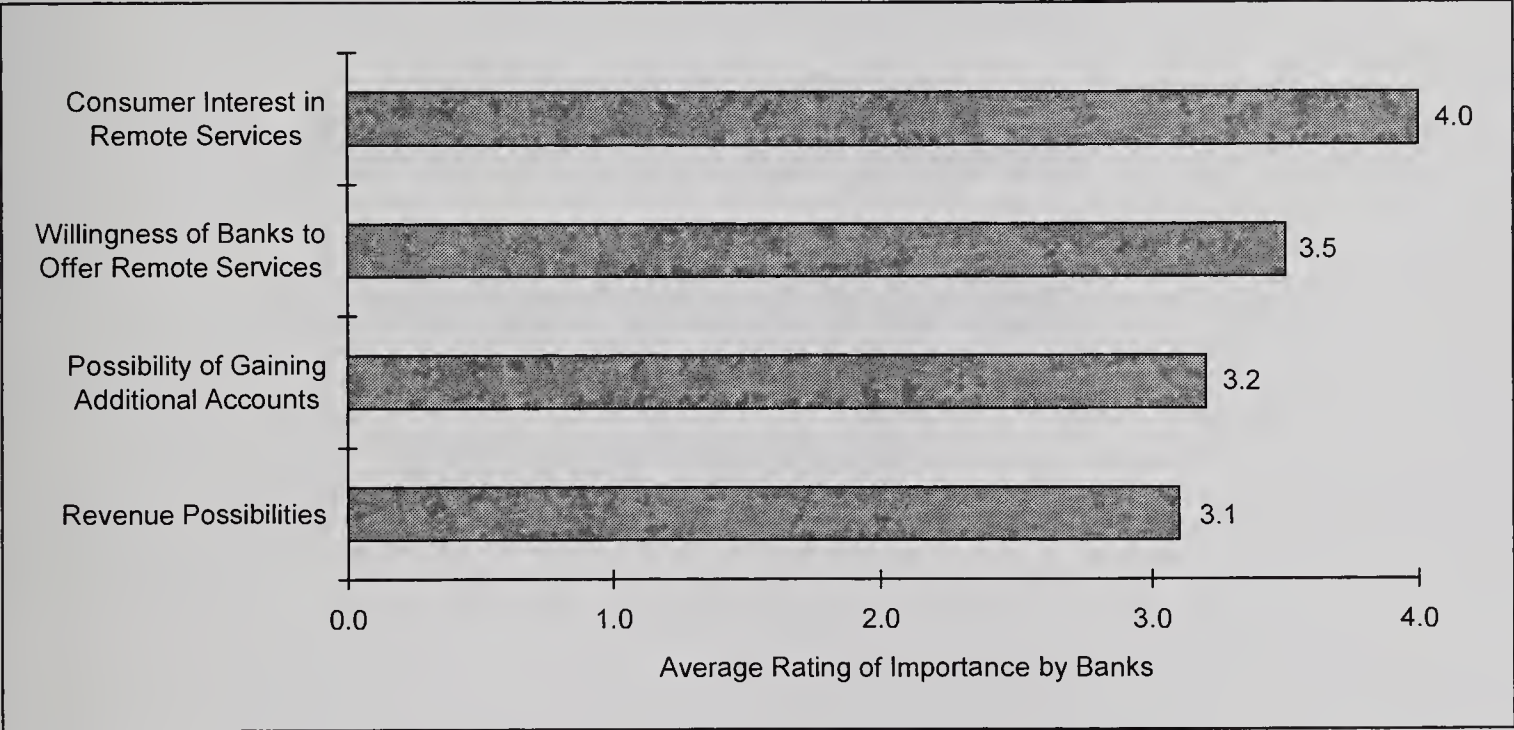
Bank respondents expect some competitors to be ready to respond to emerging needs or desires of consumers. For this reason, some banks state that they must maintain awareness of remote services offered by competitors, particularly services that make use of the Internet.

b. Forces Driving Use of “Other” Services

The forces driving “other” services are similar to those driving remote lending, mortgage, and investment services. As illustrated in Exhibit III-52, consumers, particularly those who use the Internet or network services, are interested in trying and using remote services, and some banks and nonbank competitors are willing to launch services to address these interests.

Exhibit III-52

Forces Driving Use of “Other” Services



1 = Low and 5 = High

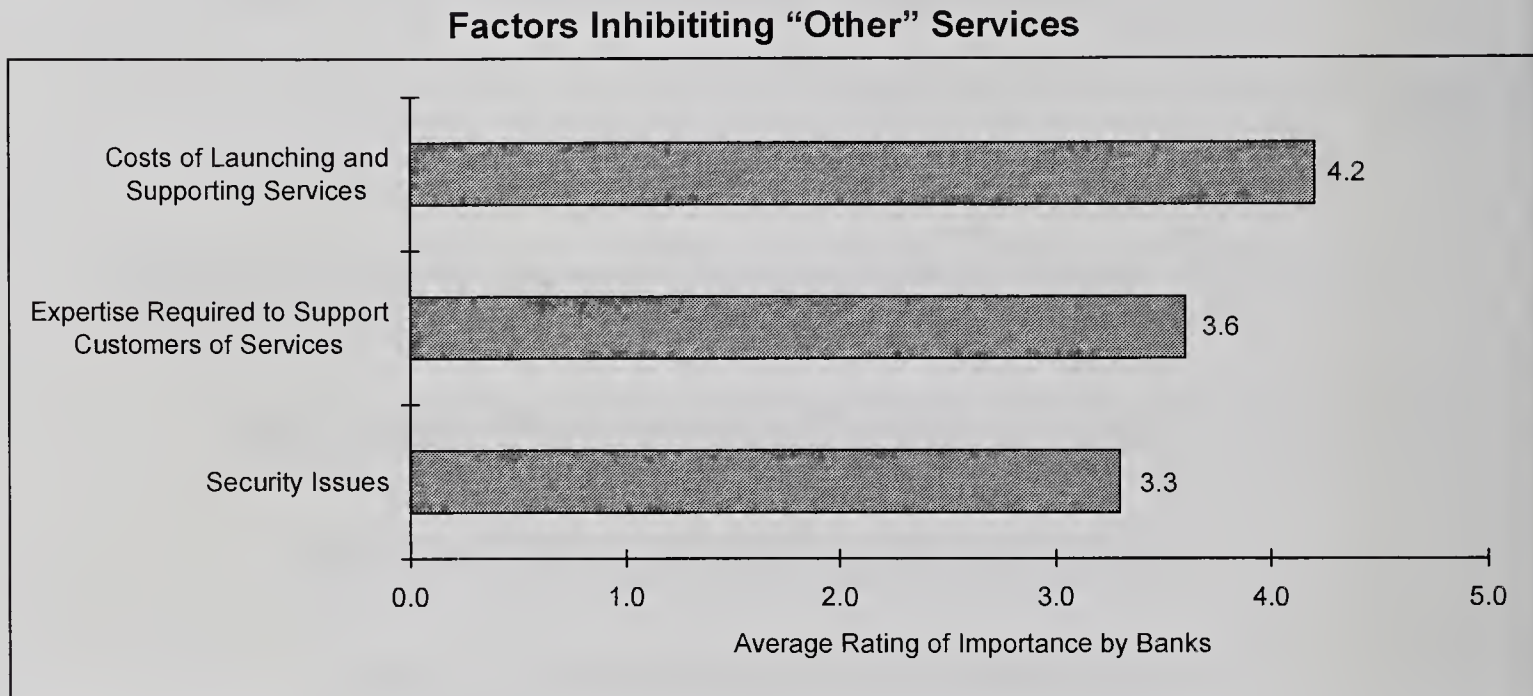
Source: INPUT

Banks report that they want to be aware of attempts to capitalize on consumer interests, even if they are not among the first initiators of such services. The possibility of gaining additional business and revenues through the Internet, as well as protecting current business, could lead them to launch services.

c. Inhibitors of "Other" Services

The costs and technical expertise required to initiate remote services as well as possible security problems, are factors that could inhibit banks from offering them, as shown in Exhibit III-53.

Exhibit III-53



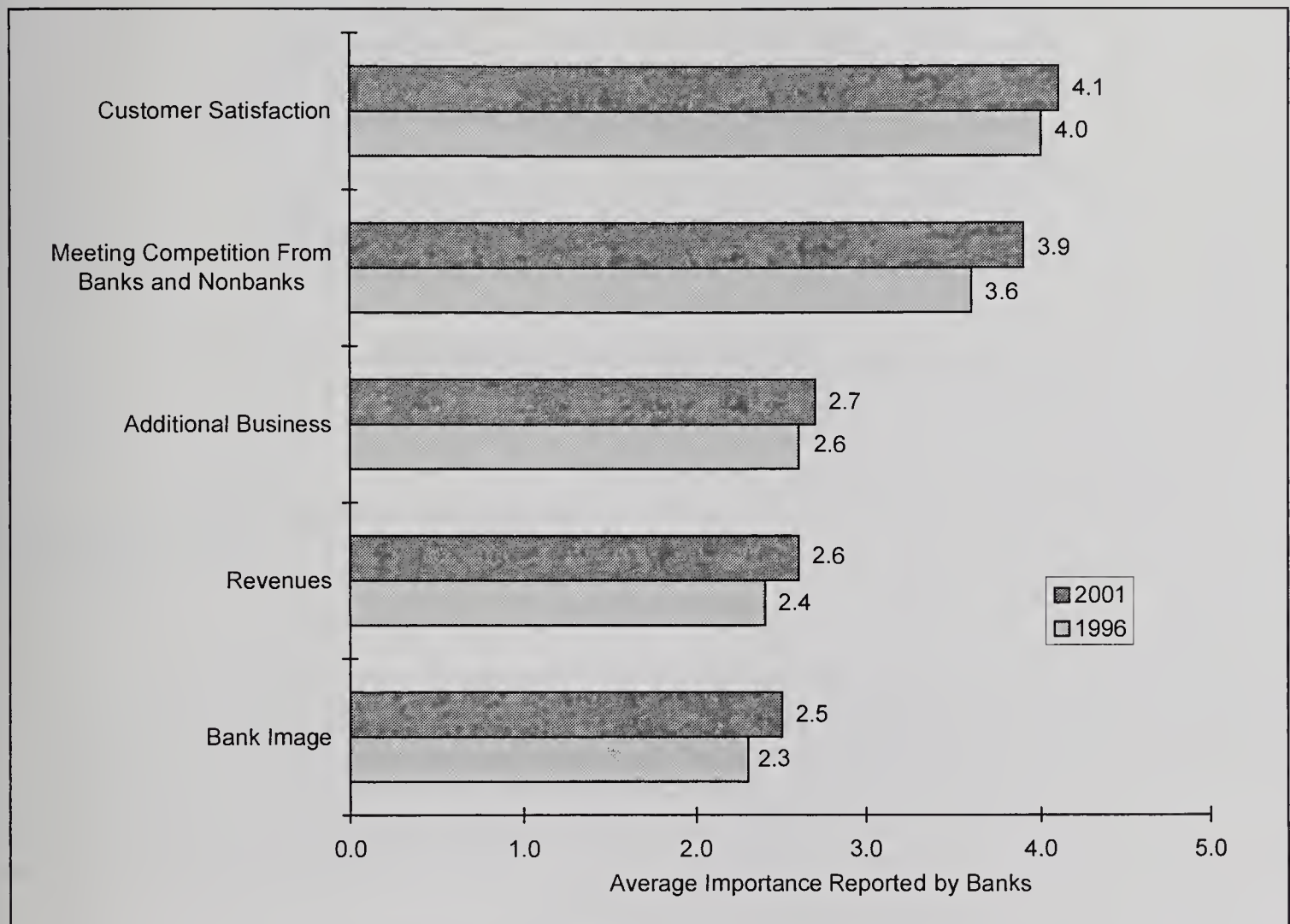
1 = Low and 5 = High

Source: INPUT

3. Analysis of Benefits

Although the benefits reported for "other" services are the same as those reported for remote lending, mortgage, and investment services, they are rated slightly lower, as shown in Exhibit III-54, indicating that banks are less certain of these services. However, they are rated high enough to indicate that banks are ready to act if competitors act or depositors demand services.

Exhibit III-54

Benefits of "Other" Services

1 = Low and 5 = High

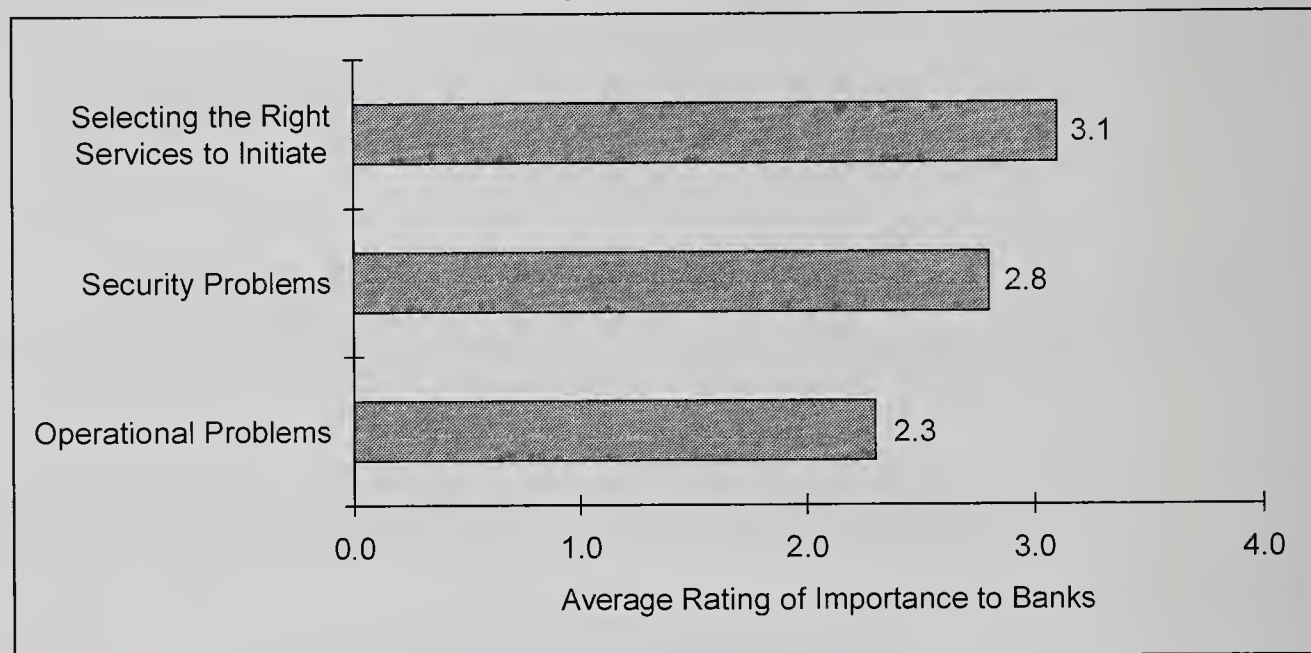
Source: INPUT

Banks report that the increased ratings over time for "other" services is due to banks' anticipation that these types of services will eventually be offered and become more important in future business.

4. Possible Problems and Solutions With "Other" Systems

In addition to security and operational problems, bank respondents noted that they could have problems deciding which services should be offered in the future; this is illustrated in Exhibit III-55.

Exhibit III-55

Problems Anticipated with "Other" Services

1 = Low and 5 = High

Source: INPUT

Problems users encounter in using "other" services and in overcoming some security problems can be addressed by improved training. Problems associated with selection of the services to offer require ongoing analysis of depositor and prospect needs, as well as continual analysis of new types of services being introduced. The most important step will be to avoid reacting to competitive announcements and instead to uncover significant needs that haven't been sufficiently recognized.

5. Forecast Use of "Other" Services, 1996-2001

Information is very limited to support forecasts of use by banks. However, bank respondents feel that more than 10% of banks will be offering such services by 2001.



Worldwide, Non-U.S. Retail Electronic Banking Market

A

Home Banking

1. Overview

According to a group of banks in Europe and Asia as well as the U.S., home banking is a service that can tie together or integrate other retail electronic banking services. Several major banks pointed out that a virtual bank could be built around home banking services with additional features that addressed credit and services as well as payment and funds transfer capabilities.

- However, a number of banks throughout the world report the use of home banking when users cannot make a payment to more than a small set of payees and/or cannot use a terminal or PC at home. Some of these banks have a combination of inquiry capabilities and the ability to specify payments to a limited set of payees such as utility, phone, and mortgage companies.
- INPUT considers the use of a terminal or PC to pay a full range of bills at home or from a personal location such as a hotel room a necessary condition for home banking.

Over 70% of banks in Western Europe claim to have some form of home banking, although a smaller percentage meet the definition stated above. The feeling that home banking is being carried out may be partially due to the use of past innovations that allowed banking to be done outside of bank offices or branches, as with GIRO systems or the Minitel. The forecasts of use of home banking shown in this chapter are based on a review and adjustment of data to meet the definition stated above.

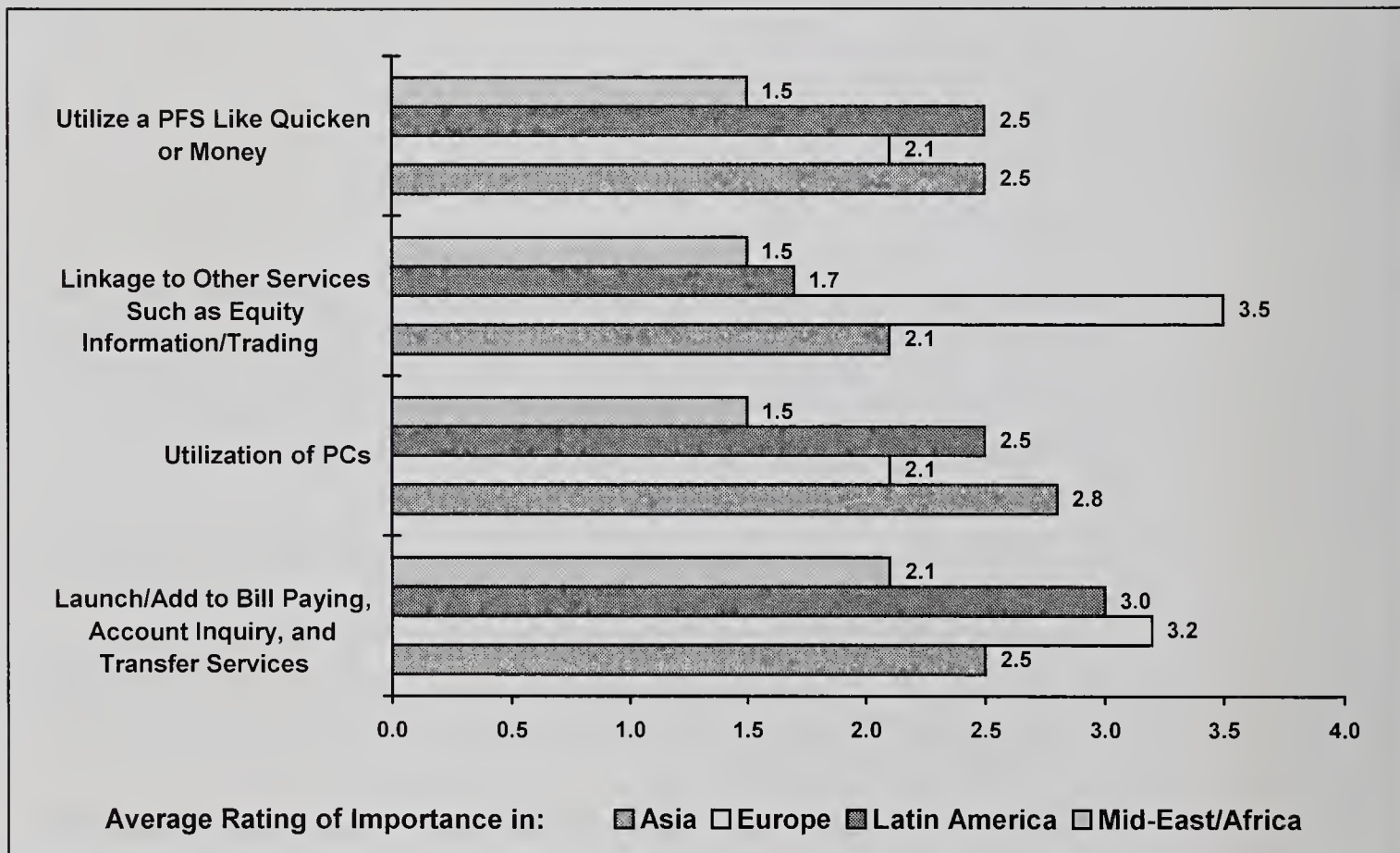
2. Trends, Drivers, and Inhibitors

a. Home Banking Trends

The most noticeable trend throughout the world in home banking at the present time is for banks to launch or upgrade home banking system capabilities. Although the trend is highest in Europe, trends to utilize the capabilities of a PC or personal finance software are slightly lower in Europe than in most other regions, as shown in Exhibit IV-1.

Exhibit IV-1

Trends in Use of Home Banking



1 = Low, and 5 = High

Source: INPUT

Experience with the Minitel over a period of 11 years has made many banks in Europe feel that the use of this telephone/terminal represents the leading edge of consumer service. It offers travel and trading services as well as payment services.

- Some European banks state that they are not sure a PC can do more than a terminal by offering PFS and interactive multimedia in user-friendly instructions. They feel that central computers and a terminal can do more for customers than a local PC can do.
- Several European banks questioned whether a PFS on a PC can actually manage a person's bank account and financial resources.
- Some banks in Europe that are not as tied to the use of Minitel, as well as banks in Latin America and Asia, report interest in using PC capabilities and providing PFS capabilities for customers.

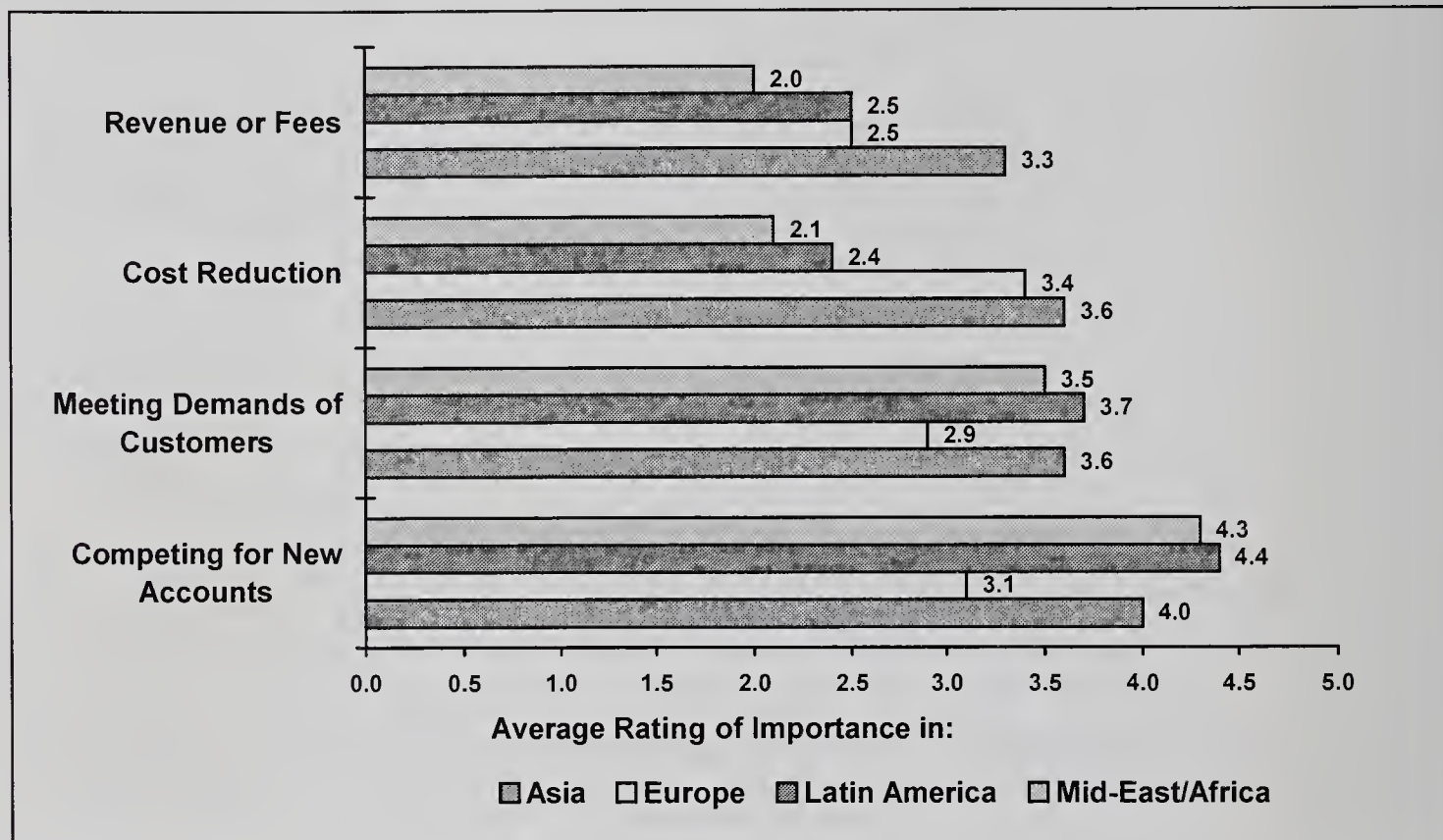
Several banks in Japan noted that they wanted to copy approaches used in the U.S. that increased demand for home banking through use of a PFS with a PC. These banks, as well as banks elsewhere in the world, also showed an interest in using the Internet to connect home banking users with a PC to their banks.

b. Market Drivers for Home Banking

In all regions, banks mention possible reduction in costs and increases in revenue and fees as drivers for home banking, but competition for new accounts and the demands or interests of depositors rate higher as drivers for home banking, as illustrated in Exhibit IV-2.

Exhibit IV-2

Factors Driving Home Banking



1 = Low and 5 = High

Source: INPUT

Competing for new accounts rates much higher than other factors in newer markets such as Asia, Latin America, and Africa/Mid-East. Competition for the accounts of people moving ahead in business is important to banks in these regions, and one of the capabilities that these people are interested in is home banking. A small percentage of these potential customers are interested in the use of home banking to manage their business accounts.

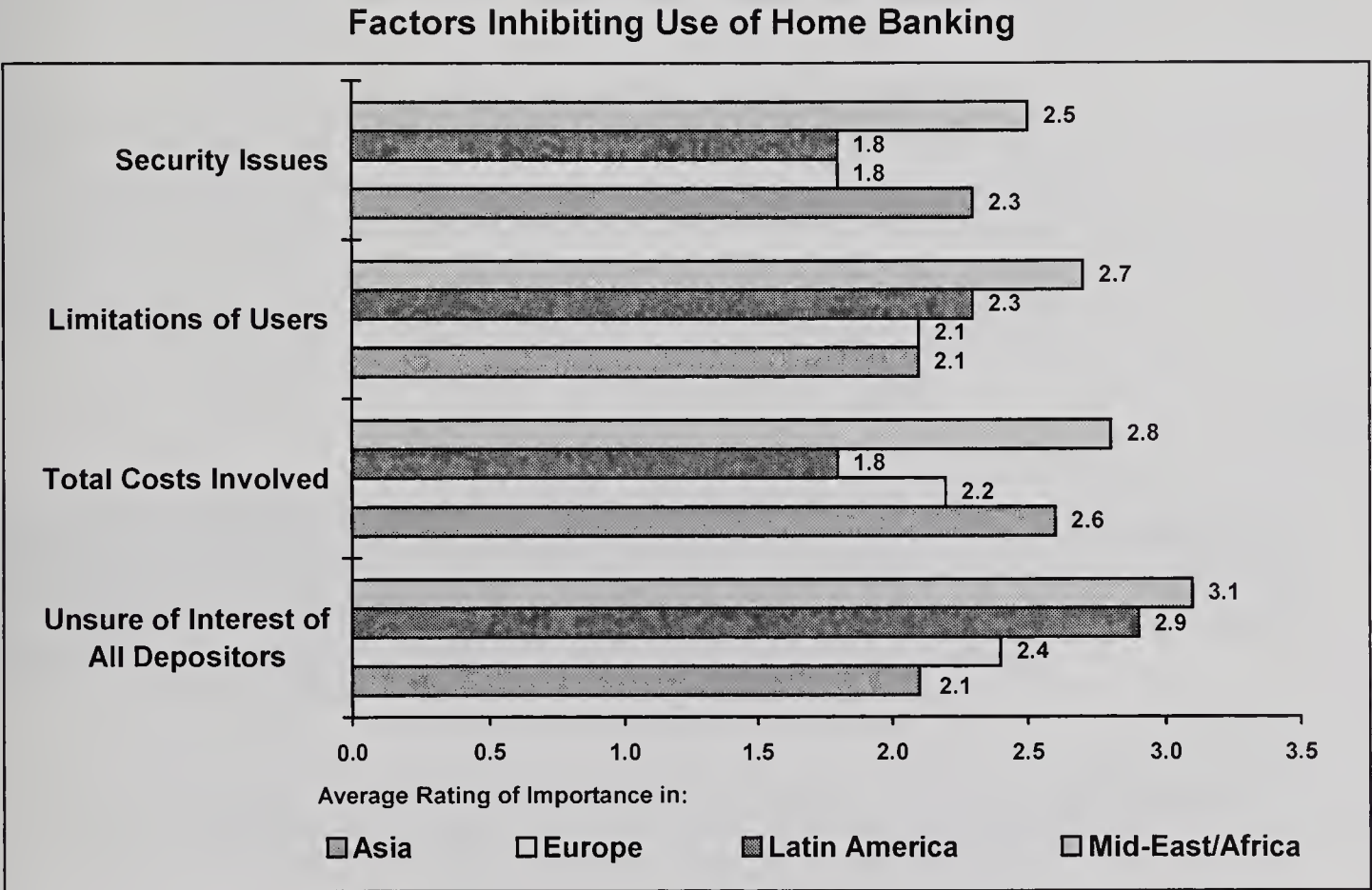
The larger banks in Canada rate competition for new accounts and satisfying present depositors very highly (4.5) as drivers for home banking. However, they also rate cost reduction fairly high (4.1 out of 5).

In all regions, some banks are very concerned about competition from nonbanks, but it is not high enough on the average to be considered a factor that is driving home banking.

c. Market Inhibitors for Home Banking

Banks in all regions report problems that could inhibit their use of home banking. The number of depositors who will actually sign up and use the system is a concern of banks, as is the ability of depositors to use home banking systems. These factors, as well as security issues and the full cost of implementing systems, can inhibit the implementation of home banking, as indicated in Exhibit IV-3.

Exhibit IV-3



1 = Low and 5 = High

Source: INPUT

Banks in all regions reported that some depositors were very interested in home banking, but some banks were uncertain that enough depositors were interested to make it a worthwhile offering. This is less so in Europe, since there is a past history of using some form of home banking. However, even there, banks are not fully aware of the interests of depositors. Vendors and consultants in Europe report that there is a higher level of interest in the use of the PC and PFS products in home banking than banks seem aware of.

Banks in Canada agree with the inhibiting factors noted above. However, they are most concerned about the total costs involved in launching a home banking service.

Banks in Canada and the U.S., as well as banks in other regions, note that they are also concerned about delaying action on home banking due to the inhibiting factors discussed.

- It could be more difficult to initiate a home banking system in the future. The depositors most interested in using such a system could go elsewhere in the meantime.
- Banks with home banking systems would also have more time to develop good support techniques for this type of service.

3. Analysis of Home Banking Benefits

The benefits that banks report they can achieve are appealing enough to encourage new home banking offerings. The specific benefits bank respondents expect are considered in relation to two points in time, the present moment and five years in the future, since some of the benefits that can be achieved will change noticeably over time, as illustrated in Exhibit IV-4.

Exhibit IV-4

Benefits of Home Banking

Benefits Identified by Banks	Average Rating of Importance in Asia		Average Rating of Importance in Europe		Average Rating of Importance in Latin America		Average Rating of Importance in Mid-East/Africa	
	1996	2001	1996	2001	1996	2001	1996	2001
Customer Satisfaction	4.1	4.2	3.9	4.1	3.4	3.6	4.4	4.5
New Accounts	2.9	2.9	3.1	3.2	3.8	4.1	2.4	2.7
Cost Savings	3.4	3.8	3.2	3.5	3.1	3.4	2.1	2.5
Revenues/Fees	2.9	3.0	3.1	3.2	3.1	3.2	2.5	2.7
Additional Business	3.1	3.5	2.8	3.2	3.1	3.3	2.6	2.7

1 = Low and 5 = High

Source: INPUT

Other than customer satisfaction or demand, the leading benefits in the regions shown in the exhibit above are gaining new accounts and cost savings. Just as in the U.S., banks feel that home banking appeals to present and potential customers.

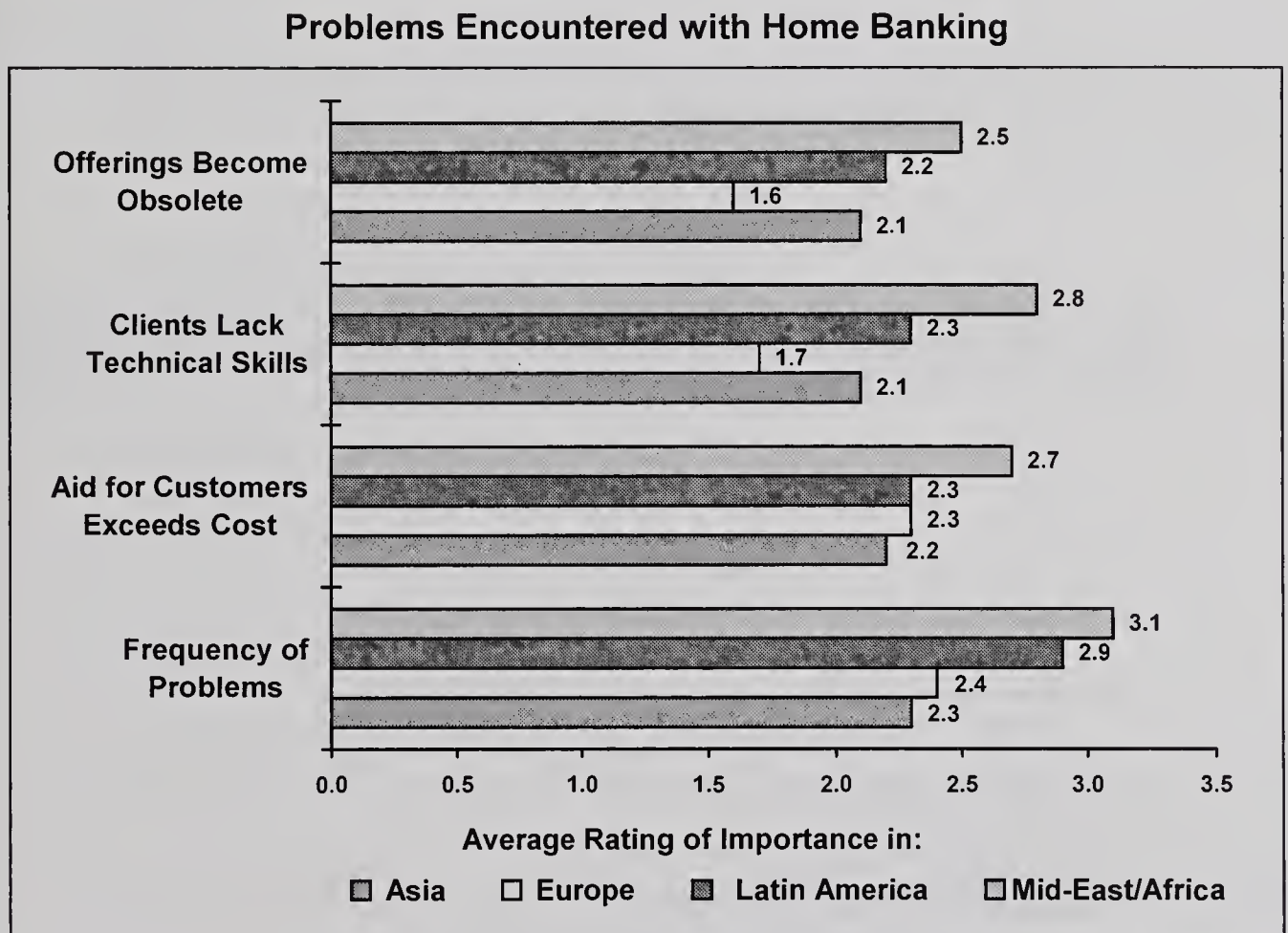
Although banks in the regions shown expect to realize cost savings as well as revenues from home banking, they are less sure of the ability to gain revenues. Over a five-year period, the likelihood of gaining cost savings increases more than the likelihood of gaining revenues.

In Canada, the leading benefits of home banking are expected to be customer satisfaction and cost savings. Gaining new accounts rates next highest.

4. Possible Problems and Solutions

As in the U.S. and Canada, the most common problem reported at the present time in all global regions is the difficulty many bank depositors experience when using home banking or on-line software to pay bills. This problem is compounded by difficulties that many customers encounter in using equipment and following instructions and the fact that many banks do not have adequate budgets to aid users. These problems are illustrated in Exhibit IV-5.

Exhibit IV-5



1 = Low and 5 = High

Source: INPUT

Several banks that had good records for dealing with user problems noted that methods had to be developed (and funds had to be obtained) for dealing with many user problems by means of trained telephone staff and recorded messages, so that the technically trained staff could concentrate their attention on the most significant problems.

Some banks, such as banks in France relying on Minitel, have many fewer problems because they have many years of experience and customers who have learned to use the system with confidence. As the use of PCs, PFS products, and the Internet for banking increases, these banks may find that more help is needed.

Banks in Canada also mentioned problems with user operations and the cost of supporting users, as well as the problem of equipment and software used in home banking becoming obsolete. Although the latter problem is rated lower, a few bank respondents feel that the software their banks are using could be replaced more quickly than anticipated.

5. Forecast of Use of Home Banking, 1996-2001

The use of home banking in several regions of the world can be analyzed by estimating the percentage of banks in each region that are offering home banking between 1996 and 2001, as shown in Exhibit IV-6.

Exhibit IV-6

Forecast Use of Home Banking Percent Penetration of Banks

Forecast Period	Asia	Europe	Latin America	Mid-East/Africa
1996	14%	34%	11%	5%
1997	24%	44%	18%	13%
1998	36%	56%	28%	22%
1999	50%	70%	43%	32%
2000	72%	77%	60%	43%
2001	80%	82%	77%	53%

1 = Low and 5 = High

Source: INPUT

Europe begins the forecast period with a high percentage of banks offering home banking, but growth slows as banks become more saturated. Banks do not predict that usage will reach 100% because that the small size or targeted interests of some banks may inhibit their use of home banking. Also, some banks feel that alternative services, such as compute-based phone services, advanced ATMs, and new options in other services may meet the needs of certain types of banks.

6. Importance of Vendor Products and Assistance

Almost all banks interested in or using home banking said they were willing to consider vendor assistance, and about two-thirds said that they had used vendor assistance - primarily software products and professional services firms - to implement systems. The types of vendors that banks report they are interested in for assistance are being sought primarily for their knowledge and/or experience with home banking, as shown in Exhibit IV-7. The vendor names used as examples were mentioned by banks; these vendors were not rated or compared in terms of the number of mentions, however.

Exhibit IV-7

Vendor Products and Services Being Sought for Aid with Home Banking

Vendor Products and Services Used in Regions Other Than North America	Rating of Importance to Home Banking by Banks
Providers of network services with on-line home banking products or concepts such as Deutsches France Telecom or America Online	3.9
SI, professional, and outsourcing vendors with experience or knowledge of home banking such as Sligos, IBM, and EDS	3.7
Card organizations with general knowledge of home banking such as MasterCard or Visa	3.6
Providers or supporters of retail electronic products or services in general such as Olivetti, SG2, and Andersen Consulting	3.5
Vendors providing Internet capabilities for retail electronic banking services such as SG2	3.2
Providers of personal finance software (PFS) such as Intuit (Quicken) and Microsoft (Money)	2.9

1 = Low and 5 = High

Source: INPUT

Although PFS is not highly rated in general, some bank respondents thought its attractiveness would increase rapidly.

As in the U.S., a number of banks report that network providers and the card organizations (Visa and MasterCard) can reduce the overhead of connecting and instructing clients in use of on-line services.

B**ATM and Advanced ATM****1. Overview of ATM Services**

There is a much wider range of ATM capabilities in operation in Western Europe than in other areas of the world. Bank respondents report using a wide range of ATM services, including cash dispensing, deposit, balance inquiry, details on transactions for the last five or more transactions, transfers between accounts, check guarantee, bill paying, delayed payment of bills, checkbook reordering, stock quotes, loading electronic purses, and initiation of miscellaneous transactions. In addition, kiosks with a variety of functions are being installed in Europe.

- Bank respondents in Asia (including Japan, China, Hong Kong, Taiwan, India, Australia, and New Zealand) reported mostly cash dispensing, deposit, balance inquiry, and transfer functions.
- Bank respondents in Latin America also reported mostly cash dispensing, deposit, balance inquiry, and transfer functions.
- Although a lower percentage of banks in Africa and the Middle East report use of ATMs, they are more apt to report bill payment functions in addition to the functions reported in Asia and Latin America.

2. Trends, Drivers, and Inhibitors

a. Trends

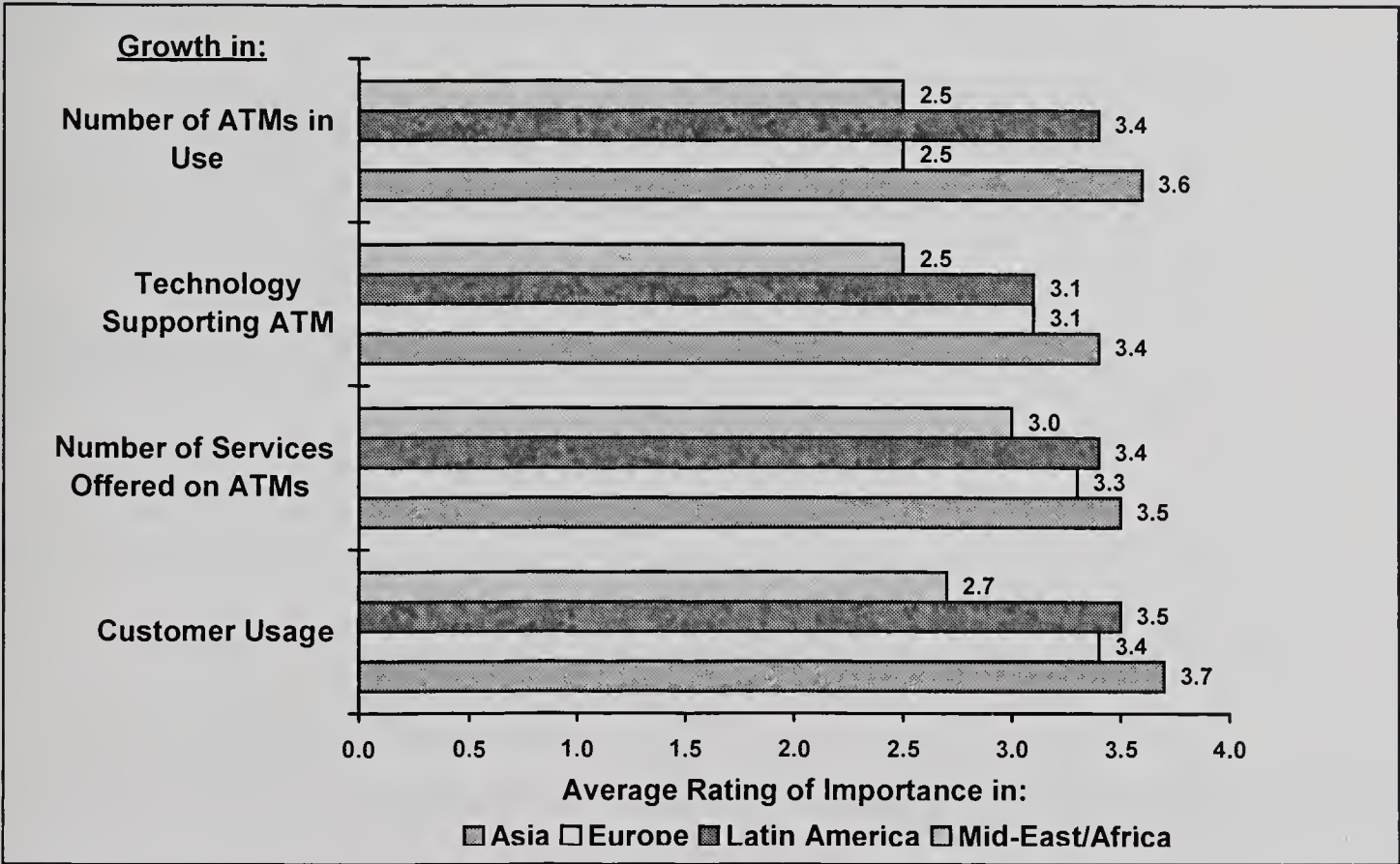
Growth in the offering of ATM services by banks is occurring throughout the world, including the U.S. and Canada, but growth among banks is less in Europe because Western Europe is nearer saturation.

Growth in the number of services offered through ATMs and in usage of ATMs by bank customers is growing in all regions of the world, including the U.S. and Canada, but at different rates.

Bank respondents report that there is an important trend to use new technology to support the growth of ATM usage, as indicated in Exhibit IV-8.

Exhibit IV-8

Trends in Use of ATMs and Advanced ATM Services



1 = Low and 5 = High

Source : INPUT

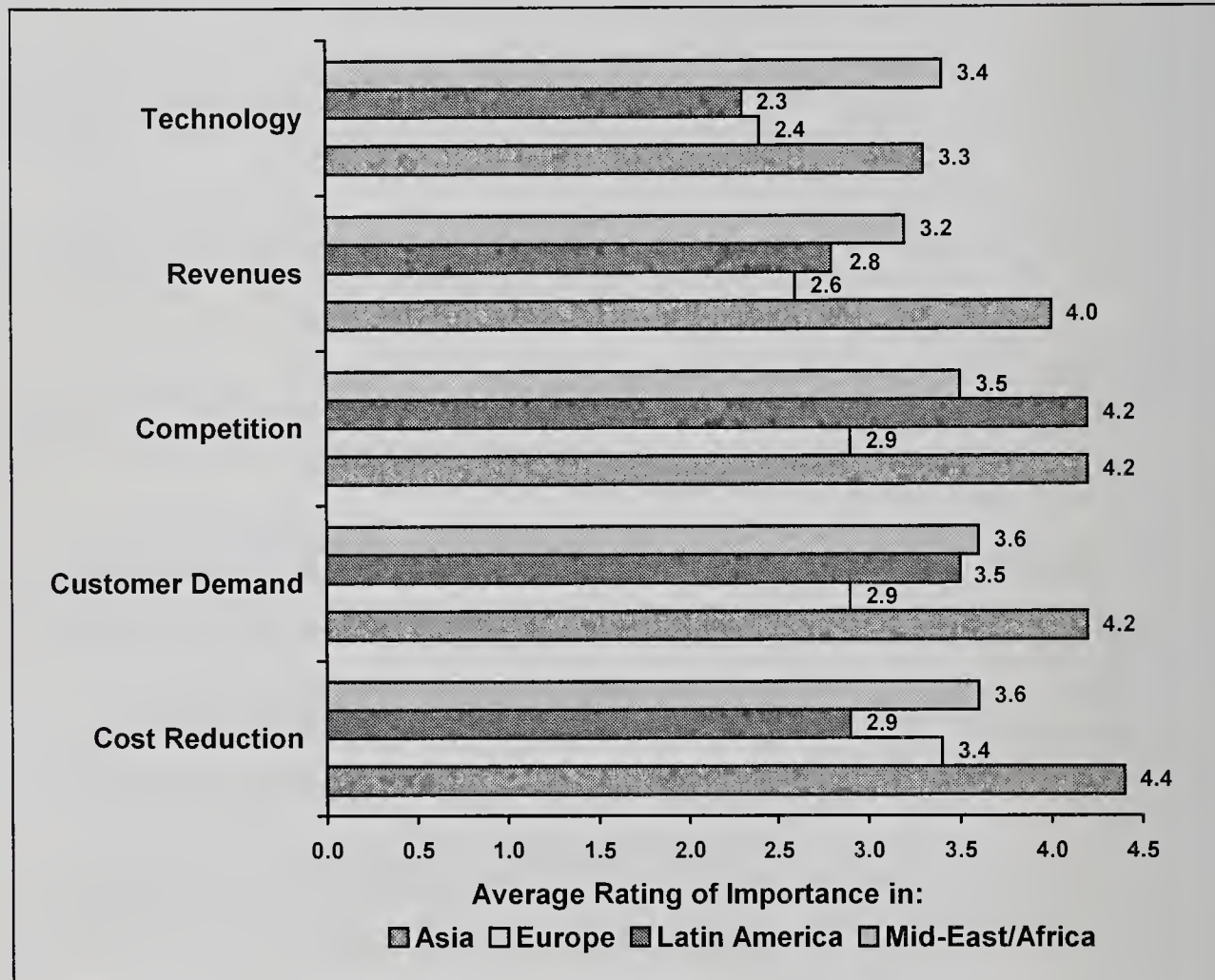
b. Forces Driving Use of ATM Services

The major drivers of ATM services in all other regions of the world as well as Canada include meeting customer demand, reducing costs, and competition, although the ranking between these drivers differs from region to region. As

shown in Exhibit IV-9, cost reduction is most often the leading driver in regions outside the U.S. (as it is in Canada).

Exhibit IV-9

Forces Driving Use of ATMs and Advanced ATMs



1 = Low and 5 = High

Source: INPUT

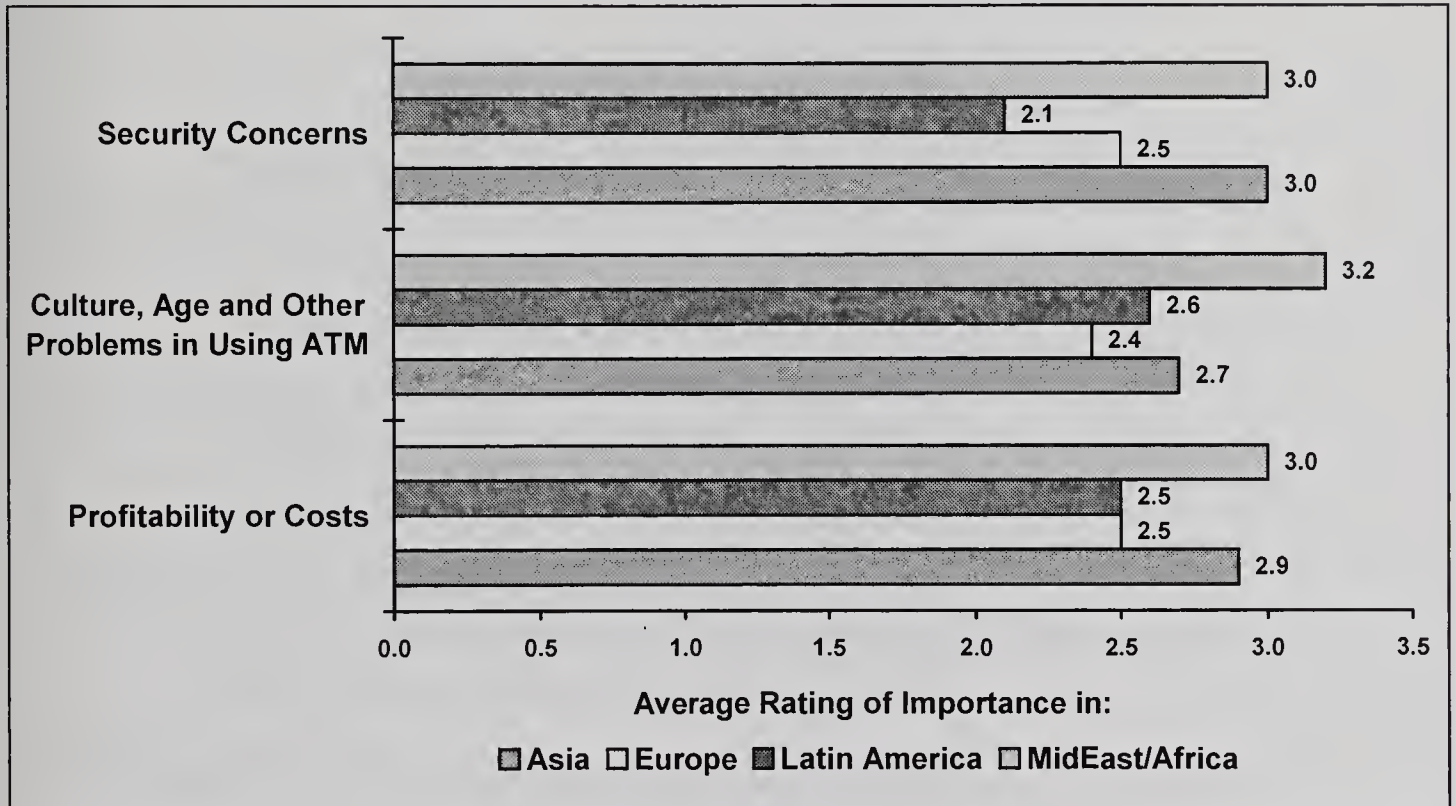
Revenues are not as significant a driver as the factors discussed above. Bank respondents in all regions expect ATMs to contribute revenues, however. Technology is also one of the drivers, but not one of the most significant.

c. Inhibitors

Although there is pressure from depositors to have ATM units for cash dispensing throughout the world, banks report that there are factors which could inhibit ATM use as shown in Exhibit IV-10.

Exhibit IV-10

Factors Inhibiting Use of ATMs and Advanced ATMs



1 = Low and 5 = High

Source: INPUT

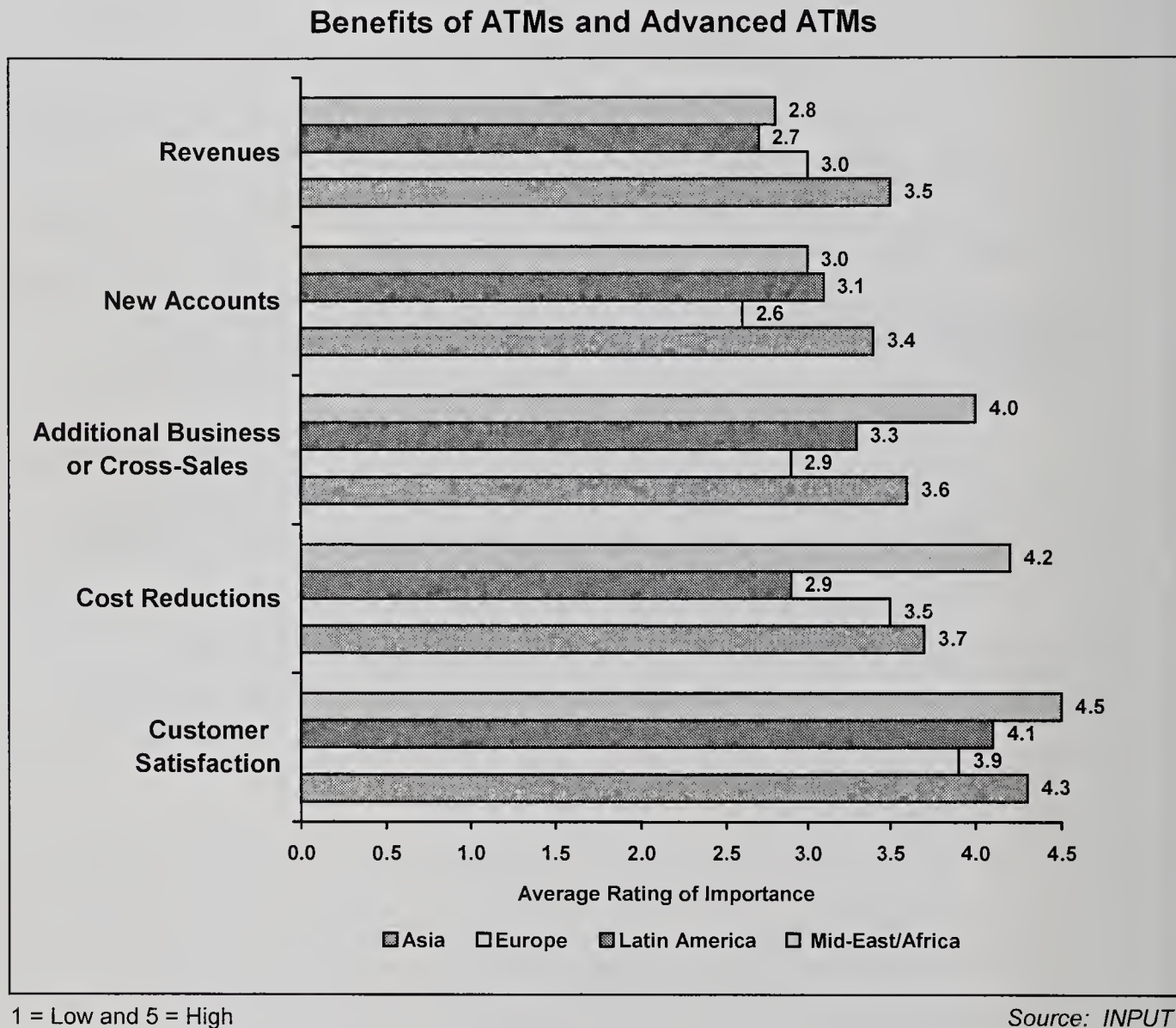
In a number of countries in all regions of the globe including Canada, there are reported to be problems in the use of ATMs that stem from the culture, age and/or lack of technical sophistication of the user. Banks in these countries report that this could be a deterrent in introducing or expanding the use of ATM devices.

Banks in some European countries also report legal problems that can delay or prohibit use of selected ATM services.

3. Analysis of Benefits

On the average, bank respondents in all regions (and in Canada), rate customer satisfaction and cost reduction as the leading benefits of ATM and Advanced ATM systems as shown in Exhibit IV-11.

Exhibit IV-11



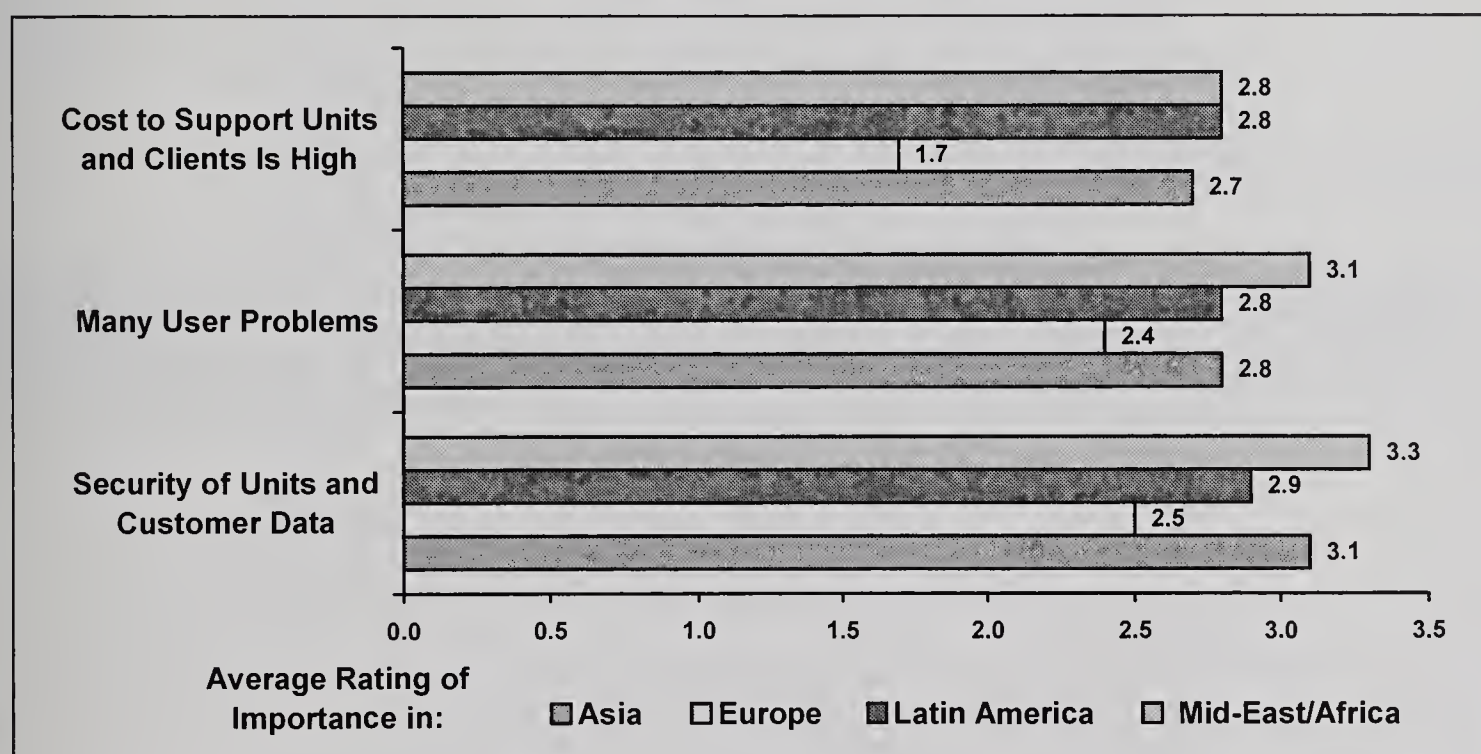
Additional business and new accounts outrank revenue as benefits, on the average. They also outrank revenue in Canada. Using a convenient ATM unit can lead a consumer to become interested in additional services such as savings accounts, credit cards, and lending products from the bank offering ATM service. Banks are developing more means of enticing ATM users to become customers of other services.

4. Possible Problems and Solutions

Security, costs of ATM devices and supporting services, and problems that users encounter were reported to be the leading problems of ATM systems according to bank respondents in the regions being analyzed. This is shown in Exhibit IV-12. In Canada, problems that users - particularly the elderly people - have and security were reported as problems.

Exhibit IV-12

Problems Encountered with ATM Units



1 = Low and 5 = High

Source: INPUT

By security, banks mean the physical security of units as well as security in relation to customer data and fraudulent actions.

- Units have been stolen and damaged in a number of locations. Careful choice of locations and consultation with firms that deal in physical security can mitigate this problem.
- Organizations and vendors dealing with ATM services can give ideas on security of customer data and possible types of fraud.

Where the costs of planned actions appear to be high in relation to anticipated benefits, contact with other banks that have ATMs or with consultants active in this application area could uncover means of reducing or controlling costs.

Problems encountered by users can be analyzed and addressed by educational material available at the bank or through leaflets, according to some banks. A help desk that can assist people who phone in for aid would also be beneficial.

5. Forecast Use of ATM Systems, 1996-2001

The use of ATM systems in regions of the world outside North America is measured between 1996 and 2001 in terms of the percentage of banks offering such a product. This is shown in Exhibit IV-13. It was necessary to investigate the data supplied by bank respondents and exclude banks that only had terminals to provide data to answer inquiries, but not to dispense cash.

Exhibit IV-13

Forecast Use of ATM Systems, 1996-2001

Forecast Period	Percentage of Banks in Asia	Percentage of Banks in Europe	Percentage of Banks in Latin America	Percentage of Banks in MidEast/Africa
1996	40	63	35	9
1997	50	71	46	17
1998	62	79	53	27
1999	72	83	61	37
2000	78	85	70	49
2001	82	86	77	62

Source: INPUT

6. Importance of Vendor Products and Assistance

Banks have a high level of interest in using vendors to aid in the development or expansion of ATM systems. Almost all banks that have ATM systems admit they have used vendors or other banks for aid. However, the vendors that are sought for aid are those that have experience and/or knowledge of ATM technology and services, as indicated in Exhibit IV-14.

Exhibit IV-14

Use of Vendor Products and Services with ATM Systems Outside North America

Types of Vendors	Average Rating of Importance
Upgrade or develop ATM systems, such as CGA, Sligos, or EDS	4.1
Software from NCR, Diebold, and other vendors that run ATM networks and handle processing	3.9
Perform processing or outsource ATM services, such as BankSys, BIK, and Sistema	3.8
General background in banking applications, like SNI, Fujitsu and IBM	3.5

1 = Low and 5 = High

Source: INPUT

The ratings shown for the products and services are worldwide (outside North America) ratings, although the vendor names listed may have been mentioned in regard to one geographic area.

C

Smart Cards

1. Overview of Smart Card Interest

Smart Cards are considered an important development in a group of industries, including banking by a number of banks, bank vendors, consultants, and consumers. However, some banks are unsure of the benefits of this product. Present and planned use of the technology is growing at a noticeable pace, however.

- The Finnish government has sponsored a project involving 600,000 disposable and 12,000 reloadable cards.

- Belgian banks started a pilot in 1995 that involved 25,000 cards distributed by Banksys, which covered small merchant purchases (below \$10), vending machines, and phones.
- Denmark has had a trial system (Danmont) running since 1992 that involves banks and the telephone company. It is testing the use of 10,000 cards that are authorized for up to \$100, but involve mostly small purchases.
- Spain has been testing the use of 50,000 cards at 1,200 terminals with a maximum authorization of \$170.
- Sweden's pilot involved 3,000 customers and 100 merchants.
- Ireland has conducted several small pilots.
- A stored-value capability has been developed for German banks by German bank card processor BIK, Tandem, and Applied Communications (ACI, which supplied the transaction processing software).
- In France, chips have been used with off-line debit cards for some time to increase security.
- In England, Mondex has carried out a well-publicized pilot at Swindon that has allowed stored-value cards to be updated at telephones and terminals by 10,000 participants. They are being used at a number of merchant locations in Swindon.
- Russia, Brazil, and Zambia are also carrying out pilots. In Zambia, the objective is to reduce the amount of cash being carried.
- South Africa has a pilot that is being carried out by banks.
- Pilots in the U.S. are discussed in Section III. Some of the issues regarding differences in standards in Smart Cards are also discussed there.
- The simplest type of Smart Card, a memory card, has been used in Europe for some time for telephones and transportation. They have a data storage space for an encoded money amount on a magnetic tape stripe.
- A more sophisticated Smart Card will be introduced in Europe in 1996 for transportation, phone vending, and some merchant use as a result of the CAFE project. This Smart Card has a blank check capability,

which requires that a microprocessor or chip be in the card to create a signature when the card is used.

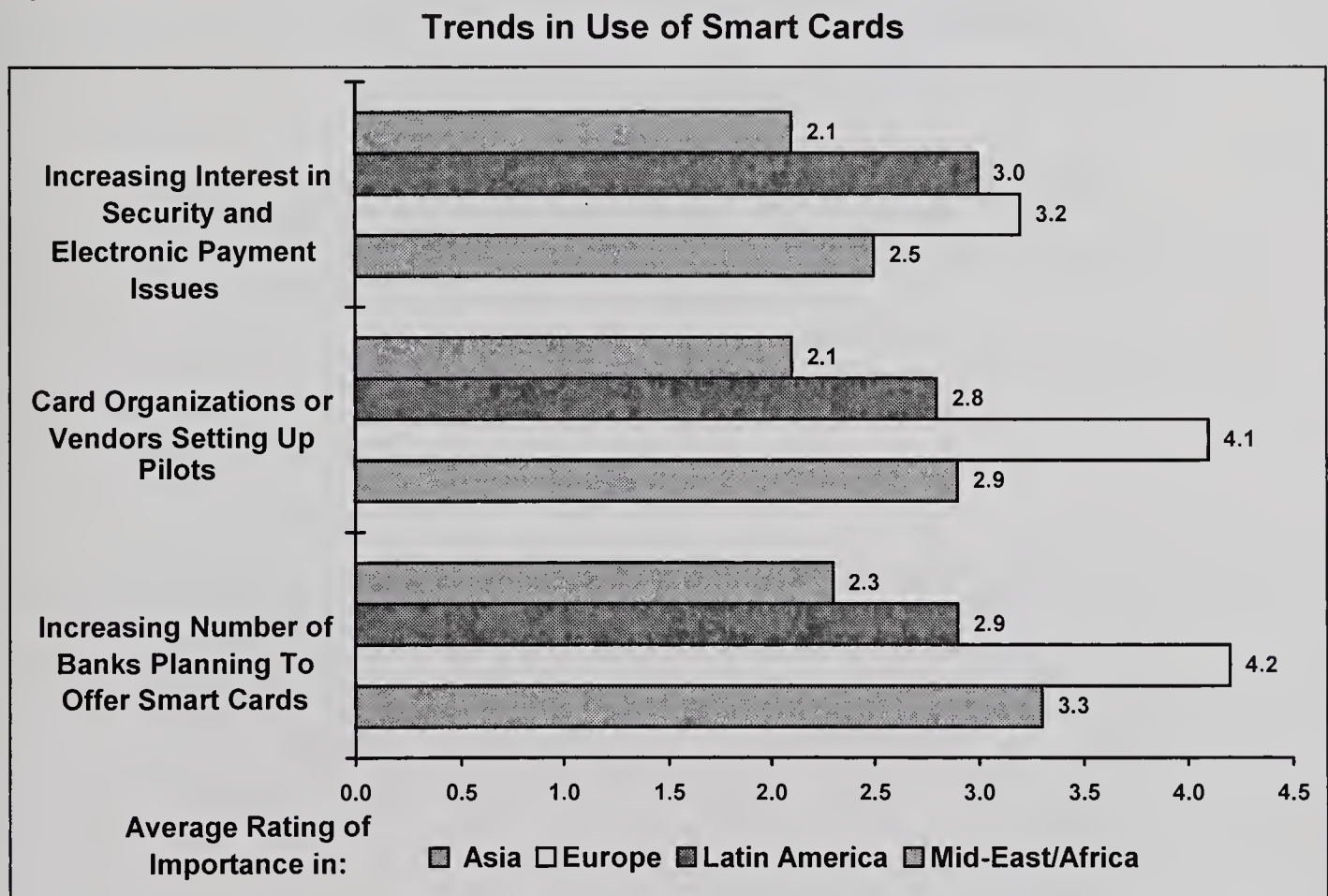
- There are two other types of Smart Cards, shared key cards and signature-transporting cards, that also require implanted chips. These cards require expensive POS devices. The latter card does not require reverification at the point of sale since the blank checks have been preloaded.

2. Trends, Drivers and Inhibitors

a. Trends for Smart Cards

Trends regarding the introduction and use of Smart Cards in global regions reported by bank respondents, shown in Exhibit IV-15, illustrate that Europe has the highest level of interest in the technology.

Exhibit IV-15



1 = Low and 5 = High

Source: INPUT

Canadian bank respondents identify trends for increasing use of Smart Cards and rising interest in security and electronic payment issues.

A number of banks feel that one of the most important aspects of Smart Card use is the development of a card with a chip that can offer more security for stored-value applications. In several instances, banks reported that they expect the new technology to result in security improvement in all plastic cards used including multifunction cards.

Although interest in Smart Cards is greatest in Europe which has the greatest number of pilots, there are pilots and developing interest throughout the world, as shown in the overview beginning this section. As several banking executives stated, the bank market seems to be waiting for news from successful tests and pilots of Smart Card technology that can confirm the benefits to banks.

b. Forces Driving Use of Smart Cards

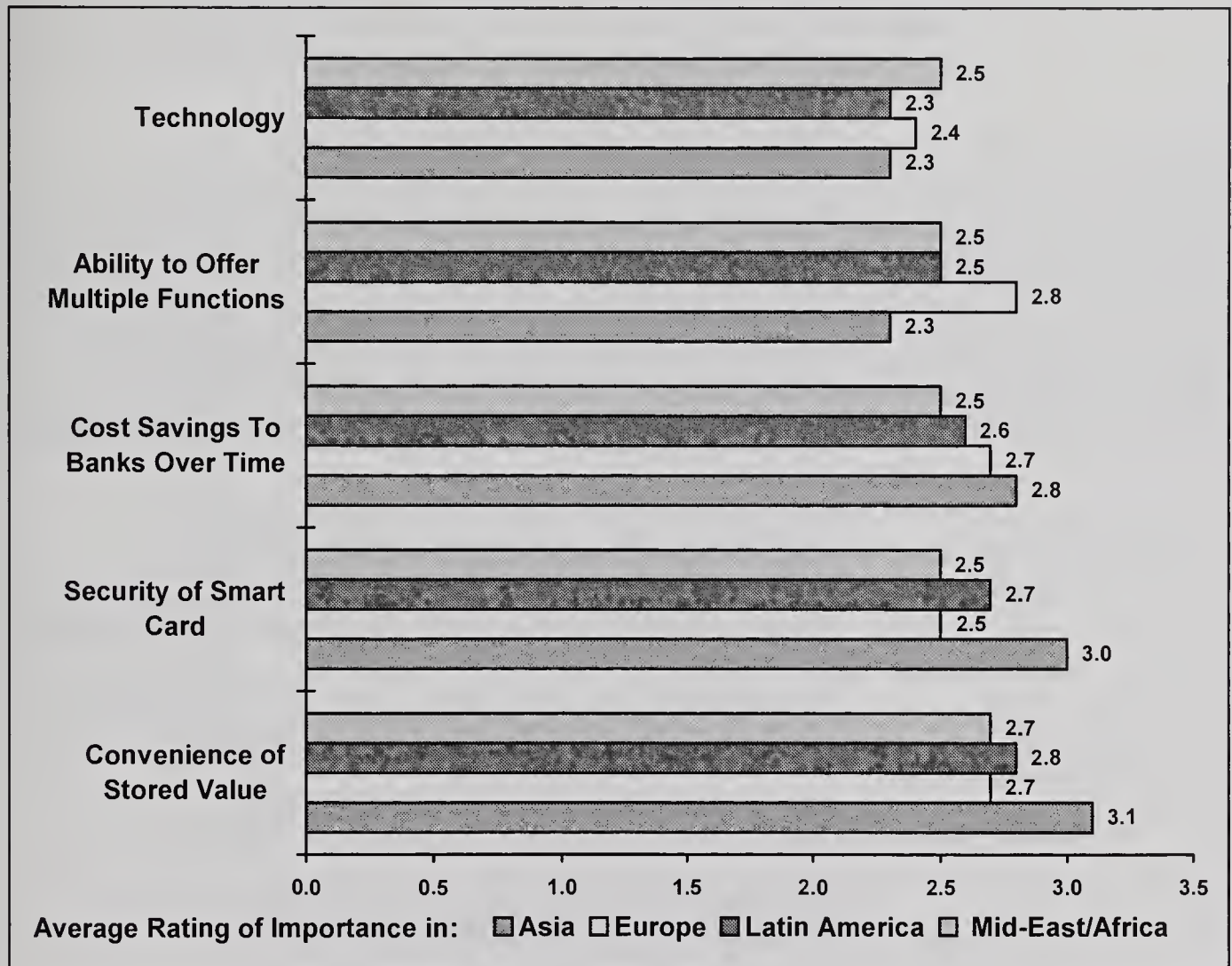
Bank respondents and vendors are focusing on three aspects of Smart Card use:

- Banks are interested in the ability to store electronic money on a card for use in shopping or services instead of pocket money, and in plans to update the card outside of a branch in an ATM or other device. These capabilities would reduce branch work.
- Banks, vendors, and retail businesses are also interested in the potential of using the Smart Card for payment on the Internet. One card manufacturer reports that a few banks, at least, are testing this capability with a card reader that can be connected to a PC.
- Various parties, including some government offices, would like to add personal information such as medical data for an individual to the Smart Card that an individual would carry.

Most bank respondents sorted the drivers for a Smart Card into interest in individual factors such as the convenience of a stored-value capability, the possibility of offering a card product that offers more security, and the possibility of having a card that can provide multiple functions, as illustrated in Exhibit IV-16.

Exhibit IV-16

Forces Driving Use of Smart Cards



1 = Low and 5 = High

Source: INPUT

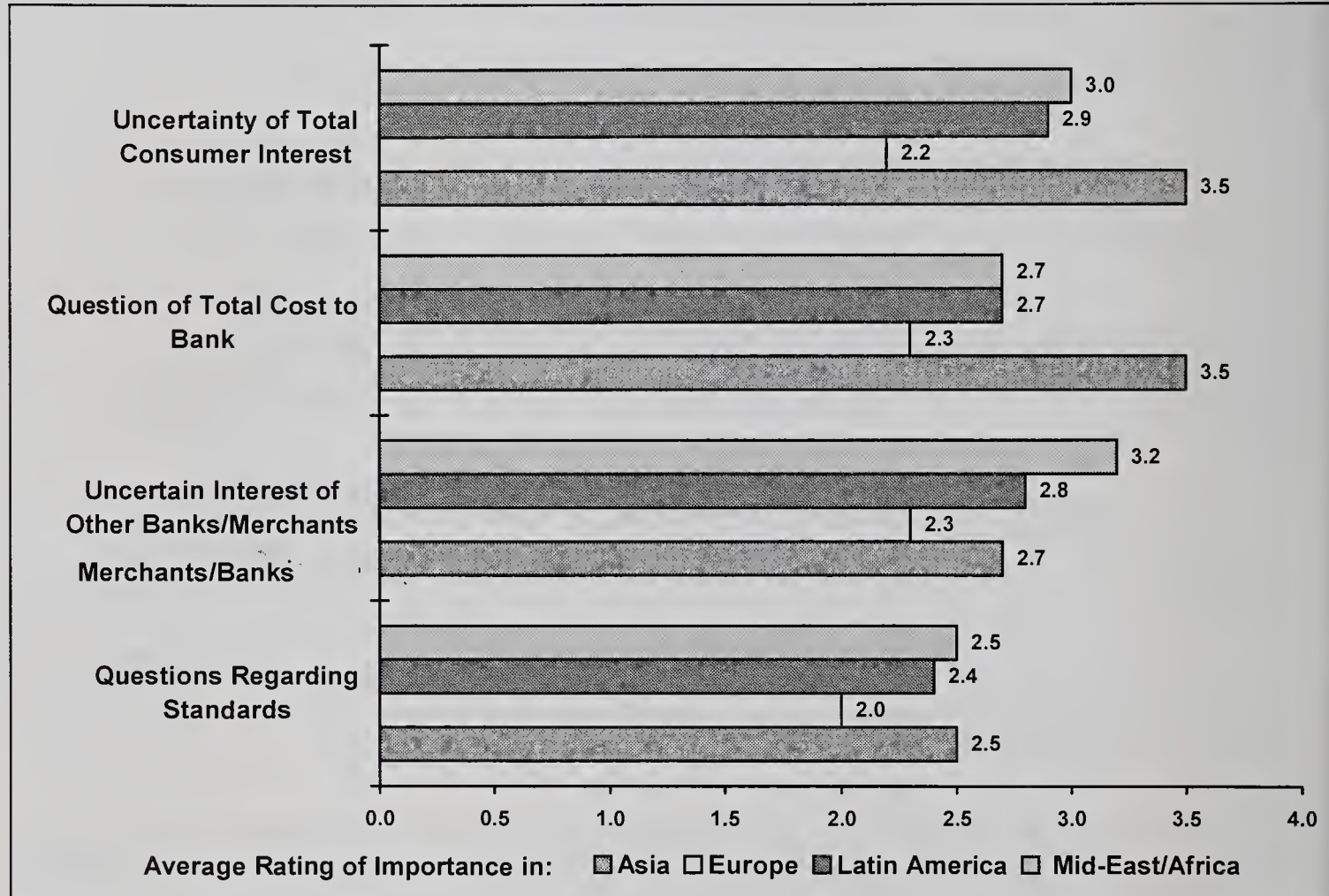
The cost savings that banks feel they will realize in branch or office expenses is an important factor to some banks, but the convenience of stored money is the primary driver. A number of bank respondents in regions outside the U.S. feel that customers will be won over to the convenience of Smart Cards that can replace the use of change and bills with a stored value of money. These banks may have analyzed available research or participated in projects that demonstrated the appeal of Smart Cards.

c. Inhibitors

As in the U.S., banks in the rest of the world are uncertain about the level of interest of all their depositors in Smart Cards and the interest of merchants and other banks with which they have contact, with as is shown in Exhibit IV-17.

Exhibit IV-17

Factors Inhibiting Use of Smart Cards



1 = Low and 5 = High

Source: INPUT

Questions regarding cost can also inhibit Smart Card projects. Because there is some uncertainty regarding changes that Smart Card technology might be faced with in the near future, some bank respondents and vendors report that they are unwilling invest in Smart Cards until more information is available.

Banks also had questions about developing and marketing the product such as standards issues and how the product should be marketed with other services.

3. Analysis of Benefits

A number of banks emphasized that the anticipated benefits of Smart Cards (shown in Exhibit IV-18) were potential rather than actual.

Exhibit IV-18

Benefits Anticipated for Smart Cards

Benefits Identified by Banks	Asia		Europe		Latin America		Mid-East/Africa	
	1996	2001	1996	2001	1996	2001	1996	2001
Customer Satisfaction	4.1	4.2	3.9	4.1	3.4	3.6	3.5	3.6
Cost Savings	2.5	2.7	3.2	3.5	2.9	3.1	2.8	2.9
Revenues/Fees	2.7	3.1	3.1	3.4	2.8	3.2	2.5	2.7
New Accounts	2.4	2.5	2.2	2.2	2.6	2.7	2.4	2.7
Additional Business	2.5	2.6	2.1	2.2	2.5	2.7	2.5	2.6

1 = Low and 5 = High

Source: INPUT

In Europe, where there is experience with stored-value cards based on a magnetic stripe, bank respondents are more confident about the opportunity to benefit from cost savings and revenues. In Europe, Asia, Canada, and the U.S., there is expectation that Smart Cards will lead to greater customer satisfaction as well as increased revenues and cost savings.

A small percentage of banks reported that they have performed studies or developed presentations on Smart Cards to convince merchants that Smart Cards will result in increased business from consumers, but only a few of these banks were convinced that they would benefit to a meaningful extent from this service because the potential number of users might not generate sufficient fee income in relation to costs. That is why pilot operations are being planned.

4. Possible Problems and Solutions

Bank respondents express concern about problems that could arise due to the newness of this type of product. Ratings of potential problems are less in Europe, as illustrated in Exhibit IV-19. This may be due to the fact that a number of banks in Europe have experience with this type of product and have already made investments in support of Smart Card services.

Exhibit IV-19

Problems and Possible Solutions for Smart Card Products

Possible Problems Reported	Asia	Europe	Latin America	Mid-East/Africa
Insufficient Consumer Interest	3.3	2.2	2.9	3.0
Support Needed for Users and Merchants	3.4	1.9	3.1	2.5
Equipment and Infrastructure Costs	2.9	2.2	3.2	2.8
Settlement or Reconciliation of Use	2.6	2.1	2.1	1.8

1 = Low and 5 = High

Source: INPUT

Banks that had experience with Smart Cards felt that planning should include contact with banks that were using the product or consultants/vendors who had appropriate experience

- These banks suggested that contacts be used to discuss or review the costs that might be involved and the aid that merchants or retail consumers might need to support applications..
- Bank respondents emphasized that programs had to be developed to explain the benefits of the product to bank customers.

Problems in settlement or reconciliation of electronic items were not regarded as highly significant by banks, and solutions to this challenge are anticipated. However, the issue of electronic money will have an impact on future Smart Card project, according to several major banks.

- In the German GeldKarte stored-value application, data on the use of electronic money will be collected from merchants for settlement. Unspent funds will be calculated and managed on a daily basis. This type of settlement and funds management will be difficult to accomplish across country borders.
- Another indication of the need for control of electronic money usage is the fact that the use of Mondex electronic money in the U.K. is regulated by the Bank of England.

The card organizations - Europay, Visa and MasterCard - are developing a standard for electronic money, EMV; Citicorp is also addressing the issue with its EMS standard. These or other approaches may have an impact on Smart Card use.

5. Forecast of Participation in Smart Card Use, 1996-2001

As Exhibit IV-20 illustrates, the percentage of banks that report or plan Smart Card offerings will be increasing rapidly in the next few years, according to bank respondents. Several vendors pointed out that the use of Smart Cards will be influenced by the growing use of cards for transportation, phone calls, and other purposes.

Exhibit IV-20

Forecast Use of Smart Card Systems, 1996-2001

Forecast Period	Asia	Europe	Latin America	Mid-East/Africa
1996	5	20	3	2
1997	14	35	11	7
1998	23	49	20	12
1999	34	58	27	17
2000	44	65	34	21
2001	54	69	40	25

1 = Low and 5 = High

Source: INPUT

Canadian banks estimated that use of Smart Cards would rise from about 15% to 50% during the planning period.

Estimates of present use and forecast growth are dependent on definitions of Smart Card products. In some cases, it was possible to determine that bank respondents did or did not use or plan to use such a product. In other cases, it could not be determined, and a judgment had to be made.

6. Importance of Vendor Products and Assistance

Banks are interested in vendor aid with Smart Cards. Over 90% of banks planning Smart Card use expect to use vendor assistance. The types of vendors that will be sought are compared in Exhibit IV-21. Names of vendors that were mentioned by banks are included for illustrative purposes.

Exhibit IV-21

Types of Vendor Products and Aid that Will Be Sought for Smart Cards

Vendor Products and Services in Global Regions Other Than North America	Rating of Importance to Home Banking by Banks
Vendors with applicable products and services used in Smart Card projects such as ACI, BIK, Verifone, Mondex, Gemplus, and Schlumberger	4.1
SI or professional services vendors with knowledge and experience in implementing systems involving Smart Cards such as Bull and ICL	3.9
Network services vendors and organizations with general experience in Smart Cards such as France Telecom, MasterCard, Visa, and Europay	3.8
Vendors with strength in the banking industry and use of new technology such as CGA, Sligos, EDS, SG2, IBM, and Andersen Consulting	3.5

1 = Low and 5 = High

Source: INPUT

D

Credit and Debit Cards

1. Overview

There is variation in usage of credit and debit cards among countries of the world, but usage is growing on the average in all regions. Consumer purchasing and use of services has become more dependent on the use of these cards, although some banks and merchants feel that Smart Cards will account for an increasing share of total consumer purchases.

Despite differences in credit and debit card services among countries and regions, there are a number of similarities in the factors driving and inhibiting changes in these products as well as in the benefits and problems reported by banks.

In addition, there are changes in products and services, such as the convergence or integration of card-based offerings and the use of new technology, that are being introduced or considered worldwide, but may be offered in somewhat different service combinations.

The following analysis separates bank responses into credit and debit card-related sections, although a number of banks discussed these categories together.

2. Trends, Drivers, and Inhibitors for Credit Cards

a. Trends

Trends that bank respondents reported in relation to credit cards highlighted growth in the use of these services in all regions of the world, although in a few countries there is still reluctance to use or accept payment from a credit card. Other trends, such as the recognition of growing competition, convergence of card products and concerns about fraud, were much stronger in some areas than others, as indicated in Exhibit IV-22.

Exhibit IV-22

Trends in Use of Credit Cards

Trends in Credit Card Services Reported by Banks	Asia	Europe	Latin America	Mid-East/Africa
Growth in Use of Services	3.2	3.3	3.4	3.3
Expanding Competition	3.4	2.7	3.8	2.8
Security Concerns Growing	2.8	2.4	2.6	2.1
Convergence of Products/Services	2.3	3.1	2.5	1.5

1 = Low and 5 = High

Source: INPUT

Bank respondents in Canada also mentioned growth and expanding competition as trends.

As example of the convergence of products, some European banks mentioned the use of a single card for credit, debit, and ATM access, such as the Eurocard/MC card and the Carte Bleu/Visa, which can also be used in the Metro and phone booths in France.

b. Market Drivers for Credit Cards

There are differences in emphasis among regions, but bank respondents in most countries rate customer demand and revenues as the two leading drivers for credit card products, as illustrated in Exhibit IV-23.

Exhibit IV-23

Factors Driving Credit Card Services

Drivers Identified by Banks	Asia	Europe	Latin America	Mid-East/Africa
Meeting Demands or Interests of Depositors	4.2	3.3	3.5	3.3
Revenues or Fees	3.7	3.1	3.2	3.6
Competing for New Accounts	3.3	2.4	3.6	3.8
Cost Reduction	2.9	2.8	2.7	2.6

1 = Low and 5 = High

Source: INPUT

Bank respondents in Canada also reported that customer demand and revenues were the leading drivers for credit cards.

Technology was mentioned as a driver by a small number of banks, particularly in Latin America, but it was not given as high a rating as the factors shown above. Banks feel that business factors are most significant in driving credit card use.

The higher rating given to revenues versus cost reduction illustrates that credit cards are significant sources of retail banking income.

c. Market Inhibitors for Credit Cards

Factors that could inhibit the issuance of credit cards are mentioned in all regions, but not rated very strongly, as shown in Exhibit IV-24.

Exhibit IV-24

Factors Inhibiting Use of Credit Cards

Factors Identified by Banks	Asia	Europe	Latin America	Mid-East/Africa
High Level of Competition	2.7	2.4	2.3	2.5
Total Costs Involved	2.6	2.1	1.7	2.4
Security Issues	2.5	2.1	1.8	2.0

1 = Low and 5 = High

Source: INPUT

Bank respondents in Canada report that the level of competition and costs could be deterrents. Although they feel security needs attention, they do not think it will be a deterrent.

3. Analysis of Benefits of Credit Cards to Banks

Although many banks feel compelled to offer credit cards in order to meet the expectations or demands of customers, banks report that credit cards score well in terms of benefits.. The specific benefits bank respondents expect are considered in relation to two points in time: the present moment and five years in the future, as illustrated in Exhibit IV-25.

Exhibit IV-25

Benefits of Credit Cards

Benefits Identified by Banks	Asia		Europe		Latin America		Mid-East/Africa	
	1996	2001	1996	2001	1996	2001	1996	2001
Customer Satisfaction	4.0	4.1	3.4	3.6	4.1	4.3	4.4	4.5
Revenues	3.7	3.9	3.4	3.5	3.6	3.8	3.6	3.7
Additional Business or Cross Selling	3.6	3.8	3.1	3.3	3.3	3.5	3.5	3.7
New Accounts	3.0	2.8	3.0	3.2	3.5	3.8	3.6	3.8
Cost Savings	2.4	2.5	2.9	3.1	3.1	3.3	3.4	3.5

1 = Low and 5 = High

Source: INPUT

Gaining revenues and additional business rank highest as benefits of credit cards, after customer satisfaction. Gaining additional business is an objective of credit card business at this time. Incentive programs and marketing plans concentrate on expanding the relationship of credit card customers in some countries so that they become a full-range customer of a bank.

In Canada, the leading benefits of credit card business are also customer satisfaction and revenues. Meeting competition ranks third.

4. Possible Problems and Solutions

The problems mentioned most often in regard to credit cards were customer questions or complaints about charges and fees, customer and costs and risks. These problems and concern about security were mentioned in all regions, as shown in Exhibit IV-26.

Exhibit IV-26

Problems Encountered with Credit Cards

Problems Identified by Banks	Asia	Europe	Latin America	Mid-East/Africa
Customer Complaints About Fees	2.4	2.2	1.9	2.4
Costs and Risks to Banks	2.6	2.1	1.7	2.4
Security	2.5	2.1	1.8	2.0

1 = Low and 5 = High

Source: INPUT

Bank respondents felt that some credit card users had difficulty understanding the product because their cultures are not used to credit. These users tended to have difficulties understanding the reasons behind charges and needed more explanation than is usually given.

In order to lessen the impact of costs and risks in credit card issuance, some banks recommended attending industry conferences or developing contacts with banks that had used credit cards for a period of time. Several banks also recommended that plans for offering credit cards should take into account the total investment involved for ongoing support costs, product development, and promotion. Perhaps more modest initial plans should be considered in some circumstances.

Banks in Canada did not report user concerns about charges or bank concerns about costs as problems of any magnitude, on the average. However, Canadian banks also felt that security was a problem and were taking action by consulting vendors and bank organizations that had experience with security for card-based services.

5. Forecast of Credit Card Issuance by Banks, 1996-2001

The percentage of banks in each region of the world that will offer credit cards between 1996 and 2001 is analyzed in Exhibit IV-27. In all regions, there are countries where the acceptability and growth of credit cards will be lower. For instance, in countries where the currency is volatile and apt to be subject to high rates of depreciation, such as Mexico, merchants may only accept cash or a debit card.

Exhibit IV-27

Forecast Use of Credit Cards, 1996-2001

Forecast Period	Asia	Europe	Latin America	Mid-East/Africa
1996	48%	80%	50%	35%
1997	54%	84%	80%	50%
1998	62%	87%	84%	58%
1999	72%	89%	87%	64%
2000	82%	91%	89%	70%
2001	86%	93%	90%	75%

1 = Low and 5 = High

Source: INPUT

The penetration in Canada will grow from an estimated 80% of banks in 1996 to a forecast 95% in 2001.

6. Importance of Vendor Products and Assistance

Banks are prone to seek assistance from vendors in implementing or operating credit card systems. Vendors with products and experience in the credit card market are favored to supply that assistance, as indicated in Exhibit IV-28. Examples of vendors that might be used, which were mentioned by banks, are shown in this exhibit.

Exhibit IV-28

Importance of Vendor Products and Aid in Credit Card Use

Vendor Products and Services in Global Regions Other Than North America	Rating of Importance to Banks
Processing services that handle card transactions, such as Sligos and BIK	4.1
SI and professional services with experience with card applications, such as SG2, Axime and CGS	3.9
Vendors with software products for use with card authorization or processing, such as ACI and NCR	3.7
Card organizations such as Visa or MasterCard	3.6
Firms with general banking knowledge such as Siemens Nixdorf, Unisys, and IBM	3.2

1 = Low and 5 = High

Source: INPUT

7. Trends, Drivers, and Inhibitors for Debit Cards**a. Trends**

As with credit cards, the trend bank respondents rated highest in regard to debit cards was growth in use of these services. Expanding competition and convergence or integration of services were also reported to be trends, as illustrated in Exhibit IV-29.

Exhibit IV-29

Trends in Use of Debit Cards

Trends in Debit Card Services Reported by Banks	Asia	Europe	Latin America	Mid-East/Africa
Growth in Use of Services	3.0	3.3	3.3	3.3
Expanding Competition	2.6	2.3	2.5	2.1
Convergence of Products/Services	2.3	2.7	2.5	1.5

1 = Low and 5 = High

Source: INPUT

Bank respondents in Canada also mentioned growth and expanding competition as trends.

As noted for Smart Cards, some European banks are quite interested in a multifunction unit or convergence of card products and thought that a trend was taking place in that direction. They gave examples of convergence of products, such as the use of one card - like the Eurocard/MC card or Carte Bleu/Visa, which can also be used in the Metro and phone booths in France - for credit, debit, and ATM access.

b. Market Drivers for Debit Cards

Customer demand and cost reduction are rated as leading drivers for debit card issuance, as indicated in Exhibit IV-30.

Exhibit IV-30

Factors Driving Debit Card Services

Drivers Identified by Banks	Asia	Europe	Latin America	Mid-East/Africa
Demands or Interests of Depositors	3.8	3.3	3.5	3.3
Cost Reduction	3.5	3.4	3.2	3.2
Competition for New Accounts	3.3	2.5	3.7	3.6
Increased Merchant Acceptance	3.2	3.1	3.2	3.1
Revenues or Fees	3.2	2.5	2.9	2.6

1 = Low and 5 = High

Source: INPUT

Bank respondents in Canada also reported that customer demand and cost reduction were the leading drivers for debit cards. In Canada and the regions listed above, competition, increased merchant acceptance, and revenues were also reported to be factors driving the use of debit cards.

Some banks in Canada and other countries pointed out that banks had to be careful about responding to the demand for debit cards because such cards might not contribute to the bottom line to the extent that was expected. The desire to respond to customer demand and competition and take advantage of greater merchant acceptance and opportunities to reduce costs did not take into account the fact that debit card services might not result in earnings high enough to cover costs.

c. Market Inhibitors for Debit Cards

Several factors listed, in Exhibit IV-31, could inhibit the issuance of debit cards in some regions.

Exhibit IV-31

Factors Inhibiting Use of Debit Cards

Factors Identified by Banks	Asia	Europe	Latin America	Mid-East/Africa
Customer Preference for Credit Cards	3.5	2.2	3.2	2.5
Uncertainty of Demand Among Bank Customers	3.2	2.0	2.9	2.4
Total Costs Involved	2.7	2.1	2.3	2.3
Lack of Widespread Merchant Acceptance	2.6	2.1	2.2	2.2

1 = Low and 5 = High

Source: INPUT

Banks in some countries report that it is difficult to plan and budget for debit card offerings while demand for these products is uncertain, costs are estimated to be high, and a number of bank customers would rather use credit cards.

Bank respondents in Canada report that the preference for credit cards, the level of competition, and costs are also deterrents.

8. Analysis of Debit Card Benefits

The benefits that banks report they can achieve from debit cards are led by customer demand or building customer relationships. More tangible benefits include cost reduction, improving competitive strength, revenues, and cross-selling opportunities, as shown in Exhibit IV-32.

Exhibit IV-32

Benefits of Debit Cards

Benefits Identified by Banks	Asia		Europe		Latin America		Mid-East/Africa	
	1996	2001	1996	2001	1996	2001	1996	2001
Customer Demand or Relationship	3.8	3.9	3.3	3.4	3.5	3.8	3.3	3.5
Cost Reduction	3.5	3.7	3.4	3.5	3.2	3.4	3.2	3.3
Competition for New Accounts	3.3	3.5	2.3	2.4	3.7	3.8	3.6	3.8
Revenues	3.2	3.3	2.9	2.9	2.9	3.1	2.6	2.7
Cross Selling Opportunities	3.2	3.3	2.8	2.9	3.1	3.3	2.4	2.6

1 = Low and 5 = High

Source: INPUT

Bank respondents in Canada pointed to benefits in cost reduction and competition chiefly, although cross-selling opportunities were also mentioned by a moderate percentage of banks.

Some bank respondents in all regions also mentioned that they felt the investment in issuing debit cards was partially justified by the fact that debit cards would be succeeded by a universal card with more security that could be used as a debit or credit card and for access to ATMs and other services.

9. Possible Problems and Solutions

The problems mentioned most often in regard to debit cards were complaints and problems of customers in using the cards, lack of widespread acceptance of the cards, and fraud, as shown in Exhibit IV-33. However, the first two problems may decline in importance over time, according to some banks.

Exhibit IV-33

Problems Encountered with Debit Cards

Problems Identified by Banks	Asia	Europe	Latin America	Mid-East/Africa
Customer Complaints and Problems in Usage	2.9	2.2	3.1	3.3
Lack of Widespread Merchant Acceptance	2.6	2.1	3.4	3.2
Fraud	2.6	2.1	2.5	2.0

1 = Low and 5 = High

Source: INPUT

In some countries in Western Europe, acceptance of debit cards by merchants is high, but in Eastern Europe and other global regions, acceptance is much more of a problem.

Acceptance is also high in many areas in Canada, but bank respondents do report problems in overall usage and fraud.

Bank respondents who have successfully addressed problems in customer usage reported that they had to investigate problems more fully and develop help desks and instruction booklets that addressed the actual problems that were reported. Also, these banks reported that they made use of research on help desks to improve the way help was given to customers.

Programs for working with merchants were also developed to increase merchant acceptance. In some cases, banks used consultants to develop and run such programs.

10. Forecast of Debit Card Issuance by Banks, 1996-2001

Exhibit IV-34 indicates the percentage of banks in each region of the world that are forecast to be issuing debit cards between 1996 and 2001.

Exhibit IV-34

Forecast of Percentage of Banks Issuing Debit Cards

Forecast Period	Asia	Europe	Latin America	Mid-East/Africa
1996	35%	50%	35%	20%
1997	39%	56%	38%	30%
1998	44%	63%	42%	35%
1999	49%	68%	46%	40%
2000	55%	72%	50%	43%
2001	60%	74%	53%	45%

Source: INPUT

The penetration in some countries and regions depends on a definition or interpretation of what a debit card is. The numbers that were reported could have under or over-reported debit cards. There are also countries that limit or prohibit debit cards such, as South Korea.

The penetration in Canada will grow from an estimate of 40% in 1996 to an estimate of 70% in 2001.

11. Importance of Vendor Products and Assistance

Just as for credit cards, banks are likely to consider assistance from vendors with knowledge of debit card applications. Banks give slightly different ratings of importance to the types of vendors favored than they did for credit cards, as shown in Exhibit IV-41. Specific vendors used or considered by banks are similar to these in Exhibit IV-35.

Exhibit IV-35

Importance of Vendor Products and Aid with Debit Card Services

Vendor Products and Services in Regions Other Than North America	Rating of Importance to Banks
Processing services that handle card transactions	4.1
SI, professional services, and outsourcing firms with debit or credit card experience	3.8
Card organizations	3.7
Vendors with software products that can be used in card services	3.6
Firms with general banking experience	3.2

1 = Low and 5 = High

Source: INPUT

E

Computer-Based Telephone Services

1. Overview

Interest in telephone payment services is rising throughout the world as banks discover that these services can be used in a more effective way to increase or support business as well as to provide basic bill paying, balance information, and transfer services. In some areas, these services are distinguished from traditional pay-by-phone services by calling them "First Direct" or "Direct Access."

- Telephone service agents use a PC for on-line access to customer files and to record information about customers during phone sessions.

- These capabilities can be used to help sell additional services such as investment products in place of savings products, or to save on credit card interest charges by switching to a card or loan product offered by the bank.
- These capabilities can also be used to support use of retail electronic services like home banking by providing a place to contact where an agent can report on whether payments, transfers of balances, or other actions such as purchases of funds have been made.

2. Trends, Drivers, and Inhibitors

a. Trends in the Use of Computer-Based Telephone Services

As shown in Exhibit IV-36, use of computer-based telephone services is rising throughout the world, but more rapidly in Europe, where the expanded types of services (typified by the First Direct Services in the U.K.) were introduced.

Exhibit IV-36

Trends in Use of Computer Based Telephone Services

Trends in Telephone Based Services	Asia	Europe	Latin America	Mid-East/Africa
Increased Offering of Computer-Based Phone Services	2.6	3.4	2.7	2.5
Increase in Functionality	2.4	3.1	2.5	2.1
Cross-Selling Other Services Through Computer-Based Telephone Services	2.6	2.7	2.6	1.9

1 = Low and 5= High

Source: INPUT

Bank respondents in Canada also report trends of growth in computer-based telephone services, including an increase in functionality and cross-selling other services.

b. Market Drivers for Computer-Based Telephone Services

The ability to cross-sell business stands out as a factor driving computer based services, but it is not the leading driver in all regions, as shown in Exhibit IV-37.

Exhibit IV-37

Factors Driving Computer Based Telephone Services

Drivers Identified by Banks	Asia	Europe	Latin America	Mid-East/Africa
Customer Demand	3.6	3.5	3.0	2.4
Competitive Differentiation	3.8	2.9	3.2	2.5
Cross-Selling Opportunity	3.7	2.8	3.1	2.3
Cost Reduction	3.0	3.3	3.0	2.0

1 = Low and 5 = High

Source: INPUT

Bank respondents in Canada rank cross-selling opportunities first and cost reduction opportunities and competitive differentiation next in importance as drivers for computer-based telephone services.

The relative rating given computer-based telephone services in relation to other retail electronic offerings indicates that these services are receiving relatively high interest at present. A number of banks commented that the ability for agents to use a PC as a tool to obtain information and serve clients had revitalized telephone services.

c. Market Inhibitors for Computer Based Telephone Services

Problems that could inhibit the offering of computer-based telephone banking services are indicated in Exhibit IV-38.

Exhibit IV-38

Factors Inhibiting Use of Computer Based Telephone Services

Factors Identified by Banks	Asia	Europe	Latin America	Mid-East/Africa
Uncertainty About The Level of Interest Among All Depositors	2.8	2.9	3.2	3.1
Questions About Profitability	2.6	2.5	2.3	2.5
How to Integrate Service With Other Retail Services	2.3	2.2	2.1	2.5

1 = Low and 5 = High

Source: INPUT

Although some depositors expressed interest in computer-based telephone services, banks in all regions reported that they had questions about the level of interest among all depositors. For that reason, some banks are also uncertain about the profitability of this kind of service.

Banks in Canada agree with the inhibiting factors noted above, but do not give them the same level of concern as banks in the regions shown above.

3. Analysis of Benefits for Computer-Based Telephone Services

The benefits that banks report they are achieving or expect to achieve from these services are led by cross-selling and customer satisfaction. Meaningful benefits in obtaining new accounts, cost reduction, and revenues are also attributed to computer-based telephone services, as shown in Exhibit IV-39.

Exhibit IV-39

Benefits of Computer Based Telephone Services

Benefits Identified by Banks	Asia		Europe		Latin America		Mid-East/Africa	
	1996	2001	1996	2001	1996	2001	1996	2001
Cross-Selling Other Services	4.0	4.1	3.2	3.3	3.4	3.7	3.3	3.4
Customer Satisfaction	4.1	4.3	3.1	3.2	3.3	3.6	3.0	3.2
Obtaining New Accounts	3.8	4.1	3.0	3.2	3.3	3.5	3.2	3.3
Cost Reduction	2.9	3.1	3.3	3.6	3.0	3.2	3.1	3.4
Revenue Increase	3.0	3.2	2.9	3.1	3.0	3.3	2.9	3.0

1 = Low and 5 = High

Source: INPUT

Bank respondents in Canada report that customer satisfaction and gaining new accounts will be their chief benefits, but also expect cross-selling opportunities, cost reduction, and increased revenues to be benefits.

Computer-based telephone services are expected to contribute strongly to bank performance in selling products, in cost savings, and in revenues, as well as helping to strengthen the relationship of customers with their banks. Although these factors should make the service popular with all banks, some feel that the product is archaic and should be replaced with completely automated services. These banks have usually not explored the ability of

phone agents to provide enriched services to customers through the use of a PC and appropriate software.

4. Possible Problems and Solutions

Despite the fact that these phone services are used with no problems or difficulties by many users, some banks customers feel that the services don't meet all their needs and/or encounter difficulties in using the services, as indicated in Exhibit IV-40.

Exhibit IV-40

Problems Encountered With Computer Based Telephone Services

Problems Identified by Banks	Asia	Europe	Latin America	Mid-East/Africa
Services Don't Meet All Customer Needs	3.1	2.5	2.9	3.0
Difficulties Some Customers Have in Using Service	2.8	2.3	2.9	3.1
Obtaining Good Phone Agents	2.7	2.5	2.6	2.9

1 = Low and 5 = High

Source: INPUT

Bank respondents in Canada and the U.S. as well as the regions listed above report a high level of problems with a small percentage of customers.

- These customers may expect account reconciliation to be done for them as part of the service or expect more details on transactions even if the description of the service did not specify these capabilities. (Deloitte & Touche, a Big 6 firm that consults on telephone services, has noted this problem.)
- A small number of customers may also forget to mention all the payments they want to make or fail to calculate balances needed to cover checks being written apart from the telephone bill paying service.

Several bank respondents noted that proactive steps have to be taken with some customers, instructions or aid have to be repeated, and material has to be mailed to them. Bank telephone agents may also have to be given additional training in help techniques to deal with the wider range of problems in customer usage occurring today. Banks also must expend more effort in selecting and training agents to handle computer-based telephone services.

5. Forecasts of Use of Computer Based Telephone Services

The use of these services in regions of the world outside North America is estimated for the period from 1996-2001 in Exhibit IV-41.

Exhibit IV-41

Forecast Use of Computer Based Telephone Services

Forecast Period	Asia	Europe	Latin America	Mid-East/Africa
1996	20%	40%	22%	15%
1997	23%	44%	26%	18%
1998	26%	48%	30%	22%
1999	29%	52%	34%	26%
2000	33%	55%	37%	30%
2001	36%	58%	40%	33%

1 = Low and 5 = High

Source: INPUT

During this period, bank respondents estimate that Canadian banks will grow from a penetration of 24% to 60%.

Europe has a high percentage of users in 1996 because of longtime use of retail electronic capabilities, including phone communication of GIRO instructions in some countries.

6. Importance of Vendor Products and Assistance

Many vendors do not have experience in helping banks set up a computer based telephone service. Less than 50% of banks that were planning or had introduced such a service considered the use of vendors. Banks that did utilize vendor services mentioned the types of services and support shown in Exhibit IV-42.

Exhibit IV-42

Use of Vendor Offerings to Aid with Computer-Based Telephone Services

Vendor Products and Services in Regions Other Than North America	Rating of Importance to Banks
Planning and/or development aid from consulting and SI firms such as Deloitte & Touche and AT&T Solutions that have knowledge of telephone services	3.9
Software products like those of Checkfree and ACI that can be used with computer-based telephone service	3.6
Processing or outsourcing firm that would develop and/or provide the service, such as ALLTEL or Sligos	3.4
General development aid from an SI or professional services firm that has telephone services experience, such as Axime	3.1

1 = Low and 5 = High

Source: INPUT

F

Internet-Based Lending, Investment, and Other Services

1. Overview of Services

The use of the Internet for banking services is growing throughout all global regions. In addition to its use as a means of communicating with home banking customers or sending and receiving information between banks and customers, there are services for retail customers emerging that are dependent on Internet capabilities. Due to the number of contacts that are possible on the Internet and the low cost of use for prospects, the Internet is becoming an attractive means of marketing or soliciting lending, mortgage, investment, trust, and other services. In the U.S., these Internet-based services are analyzed in two groups:

- Lending, mortgage, and investment services, which a group of banks is now offering on the Internet.
- Remote trust, insurance, and financial management services, which banks are planning or starting to introduce.

In other countries, these services will be studied in one grouping, called Internet-based lending, mortgage, and other services.

2. Trends, Drivers and Inhibitors

a. Trends

As illustrated in Exhibit IV-43, trends supporting the growth of remote Internet-dependent services include the growing willingness of consumers to use remote network-based services and the increasing interest of banks in offering remote retail banking services.

Exhibit IV-43

Trends Supporting Use of Internet Based Services

Trends Supporting Use of Internet-Based Services	Asia	Europe	Latin America	Mid-East/Africa
Increasing Use of Remote Banking Services	2.5	2.7	2.4	1.8
Increasing Interest of Banks in Internet-Based Services	2.0	2.3	2.5	1.5
Increasing Internet Capabilities	2.0	2.1	2.2	1.5

1 = Low and 5 = High

Source: INPUT

The ratings given these services are low at present because they are just being introduced or planned in the regions noted above and in Canada. However, these services are being developed or introduced at a small percentage of banks.

b. Forces Driving Use of Internet-Based Services

As illustrated in Exhibit IV-44, the major drivers of Internet-based services are the demand of consumers for remote banking services, including lending and investment, and the technology that makes it economic and attractive for banks to offer these services. Potential revenues and opportunities for selling additional business are also drivers, according to bank respondents.

Exhibit IV-44

Forces Driving Use of Internet-Based Services

Forces Driving Internet-Based Services	Asia	Europe	Latin America	Mid-East/Africa
Customer Demand for Remote Services	2.5	2.7	2.4	1.5
Internet Technology	2.4	2.3	2.2	2.0
Revenue and Additional Business Opportunities	2.2	2.4	2.2	1.5

1 = Low and 5 = High

Source: INPUT

The first two drivers listed above are also reported by Canadian bank respondents as important in regard to Internet-based products, but revenues were not considered a driver at this time.

c. Inhibitors

Inhibitors mentioned for Internet-based services focus on the uncertainties of these services, as illustrated in Exhibit IV-45.

Exhibit IV-45

Factors Inhibiting Use of Internet-Based Services

Factors Inhibiting Internet-Based Services as Reported by Banks	Asia	Europe	Latin America	Mid-East/Africa
Uncertainty About Development and Support Costs	2.7	2.5	2.4	3.0
Uncertainty About Interest Among Bank Customers	2.5	2.4	2.3	3.2
Security Concerns	2.5	2.4	2.1	3.0

1 = Low and 5 = High

Source: INPUT

The same inhibitors were mentioned by Canadian bank respondents.

Some banks pointed out that it was too early in the development of these services to analyze inhibitors or drivers, but admitted that these services were likely to grow and possibly to become very important in the future.

3. Analysis of Benefits

Banks in Europe mention the possibility of selling lending, mortgage, investment, and insurance products including annuity products. Banks in other regions and Canada are interested primarily in selling lending and mortgage products on the Internet. Revenues from these products are one of the benefits anticipated for Internet-based services, but not the leading ones, as indicated in Exhibit IV-46.

Exhibit IV-46

Benefits of Anticipated Internet Based Services

Benefits of Internet- Based Services as Reported by Banks	Asia		Europe		Latin America		Mid-East/Africa	
	1996	2001	1996	2001	1996	2001	1996	2001
Customer Satisfaction	3.3	3.4	3.4	3.7	3.1	3.1	2.2	2.2
Competitive Advantage	3.1	3.5	3.5	3.8	3.1	3.4	2.2	2.4
Revenue and Additional Business	2.2	2.5	2.4	2.6	2.2	2.5	2.0	2.1
Cost Savings	2.0	2.4	2.3	2.5	2.1	2.3	1.8	2.0

1 = Low and 5 = High

Source: INPUT

Bank respondents report that Internet-based services will provide opportunities to increase customer satisfaction and tie customers closer to the bank. They will also provide a competitive advantage that can attract new accounts.

Bank respondents in the regions noted above and in Canada believe that Internet-based services will eventually lead to a reduction in costs because services can be sold more economically on the Internet.

A few banks in Europe (as well as some in the U.S.) mentioned that sales of mortgage products and perhaps lending on the Internet could benefit from new types of selling in which customers would specify their needs and credit worthiness. Banks could eventually conduct a bid (or reverse auction) for the business.

4. Possible Problems and Solutions

Because these services are just being introduced or are in the planning stage in many countries, ideas about actual or potential problems are not fully developed. There are concerns about the level of interest of bank customers in the services and the costs to develop and support these services. There are also concerns about security.

Bank respondents report that a wise course of action at this time is to make contact with banks that have introduced the service or vendors that have been involved in developing or managing the service.

There are also legal and regulatory considerations that must be faced in various countries regarding the sale of lending, mortgage, investment, and/or insurance products on the Internet. These problems must be dealt with through the appropriate government offices in these countries. Several banks warned that these problems must be researched as soon as possible—not after plans for services have been developed.

5. Forecasts of Use of Internet Based Services

The use of Internet-based systems in regions of the world outside the U.S. is measured between 1996 and 2001 in terms of the percentage of banks offering such a product, as shown in Exhibit IV-47.

Exhibit IV-47

Forecast Use of Internet-Based Systems, 1996-2001

Forecast Period	Percentage of Banks in Asia	Percentage of Banks in Europe	Percentage of Banks in Latin America	Percentage of Banks in Mid-East/Africa
1996	2	2	2	1
1997	5	9	5	3
1998	8	16	8	5
1999	12	24	12	7
2000	17	32	16	9
2001	23	35	20	12

1 = Low and 5 = High

Source: INPUT

(Note: Internet Will Also Be Used for Communications, Home Banking, and General Information)

6. Importance of Vendor Products and Assistance

At present, all banks planning or introducing Internet based services such as on-line lending and mortgage, investment, or insurance products state that they will use or are using the services of vendors. Vendors that are favored for use are those with experience and/or products that can be used with Internet applications.

- Some of the vendors mentioned, such as ACI, Sun, Cybercash, and Checkfree, have products that are being used on the Internet.
- Other vendors, particularly SI, professional services, and outsourcing vendors, may have prepared themselves for Internet projects, but have little actual experience.

Vendors mentioned by banks for Internet-based remote services include three main types: SI, professional services, and outsourcing vendors with Internet experience; vendors with software products for the Internet; and vendors with significant experience in banking that are not recognized for Internet knowledge. These are shown in Exhibit IV-48. Network services providers are also recognized as possible sources of vendor aid.

Exhibit IV-48

Type of Vendors Sought with Aid for Internet-Based Services

Vendor Information Services in Regions Other Than North America	Rating of Importance to Banks
Professional services and SI vendors that have experience developing Internet applications: CGS, NCR, EDS, Fujitsu, Olivetti, Deloitte & Touche and AT&T Solutions were mentioned as examples	4.1
Vendors with software products that can be used with Internet systems: ACI, Cybercash, Sun, Microsoft, and Netscape were mentioned	3.9
SI vendors with recognized banking experience but without recognition for Internet projects: Siemens Nixdorf, IBM, and ALLTEL were mentioned	3.6
Network services providers who could assist with Internet projects: AOL, France Telecom, NTT, and MCI were mentioned	3.2

Low = 1 and 5 = High

Source: INPUT



Utilization of the Internet for Retail Electronic Banking

A

Overview of Internet Use

1. Attraction of the Internet

The Internet is a highly attractive vehicle for retail electronic banking services.

- It is a low-cost means of connecting individuals to banks.
- It is a means of bringing bank services such as lending, mortgage, and savings/investment to the attention of good prospects.
- It's growing explosively. The rate of growth of Internet hosts doubled in most global regions between early 1994 and early 1995.
- Software product developers are making the Internet much easier to utilize.
- Leading telecommunications firms as well as smaller innovators are developing more Internet capacity.

2. Retail Electronic Banking Services and Internet Use

During the past two decades, home banking systems generally used a dial up line to connect users to their banks, rather than a network services capability. Some early systems also used time-sharing vendors.

- The use of network services including CompuServe and America Online for home banking has been introduced during the past five years and has proven popular with a number of users. Chase PC Banking uses a connection through CompuServe that does not include a charge from CompuServe for the user.
- Recently, some U.S. banks, including Citicorp, Huntington Bankshares, and U.S. Bancorp, have started to take advantage of the Internet to connect home banking users to banks. This takes advantage of the fact that Internet connectivity is a low-cost option, and there are many present users of the Internet who would be potential customers of home banking systems using the Internet. First Union and NationsBank have also taken steps to utilize the Internet for home banking in the future.

Home banking users outside the U.S. are using dial-up connections to banks as well as connections to Internet and network service providers like America Online and Deutsches Telecom.

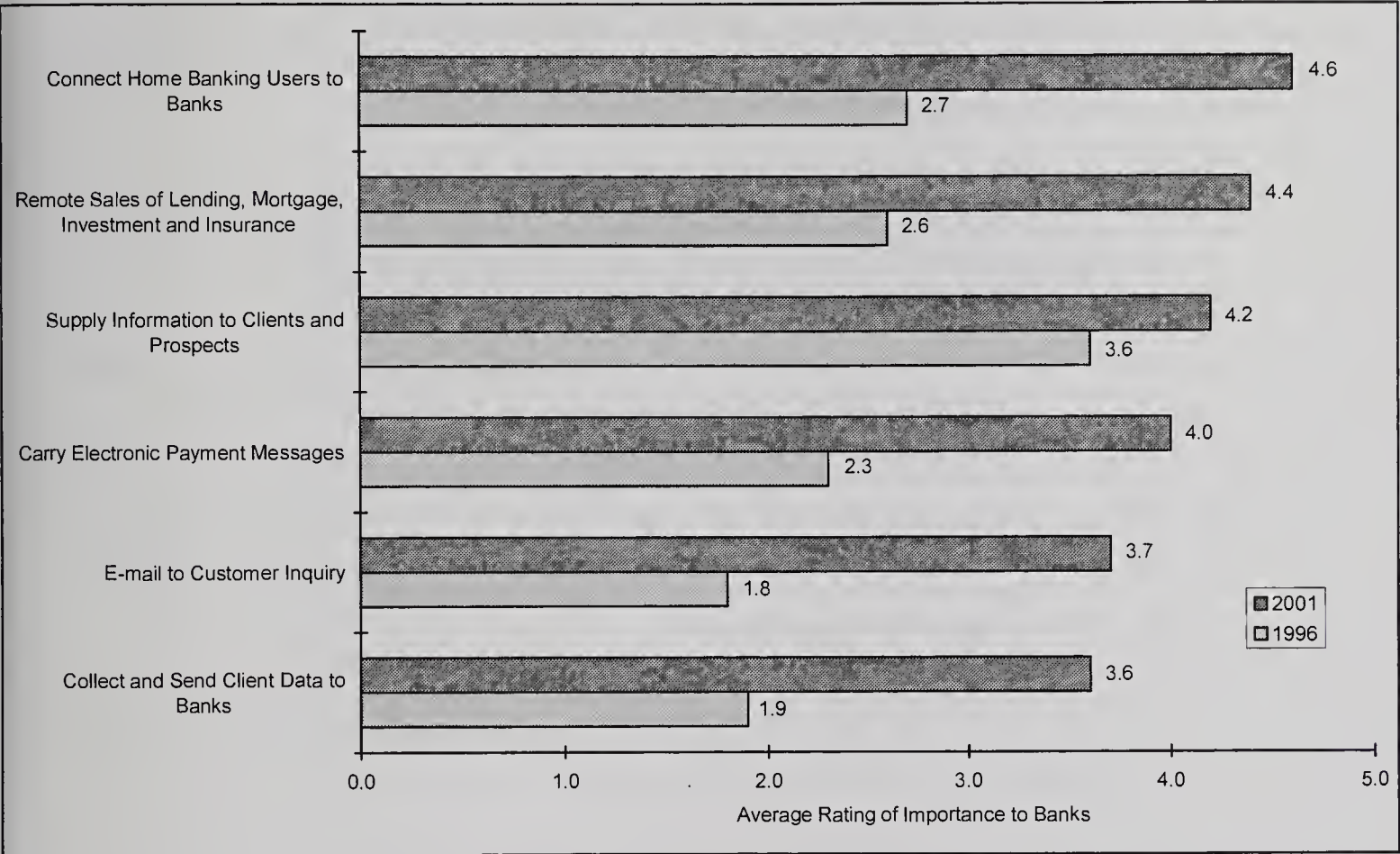
Banks have started to use the Internet for other retail electronic applications. Wells Fargo markets lending arrangements and mutual fund accounts on the Internet. First Chicago plans to offer a full range of services including mortgage and advice from private bankers in the next twelve months.

The most common use of the Internet by banks is to have a home page that promotes retail products. The number of home pages on the Internet used by banks to promote their services grew to over 350 by the middle of 1996 in the U.S.

Among the retail electronic banking services that are or will be used with the Internet in the U.S., home banking is the one that bank respondents expect to be most important in the future in relation to Internet support, as shown in Exhibit V-1.

Exhibit V-1

Use of the Internet for Retail Electronic Banking in the U.S.



1 = Low and 5 = High

Source: INPUT

Other than home banking, the services bank respondents in the U.S. feel will receive the greatest impact from use of the Internet are remote lending, mortgage and investment services, remote insurance, trust, and several offerings not yet fully specified. Several major banks in Europe and Asia are interested in the potential of these services.

Bank respondents in the U.S. and elsewhere are interested in the use of the Internet to support message traffic between advanced ATMs or kiosks and banks, as well as to deliver responses to inquiries made by phone or through the Internet.

Bank respondents also express interest in techniques used to make payments on the Internet for purchases of goods and services. Some feel that electronic money or digital cash will grow in use for this purpose.

Banks and vendors in other global regions could not supply enough data to fully analyze Internet uses in the future. However, respondents in Europe and Asia feel that the Internet will be used for the purposes shown in Exhibit V-1.

3. Retail Electronic Services Less Likely to Use the Internet

Bank respondents report that it is unlikely that ATM applications that require authorization or on-line access to accounts will use the Internet. However, some respondents point out that delayed debit cards or Smart Cards would not require on-line access.

- The need for fast interaction when depositors initiate a cash-dispensing transaction with current ATM access cards makes the Internet less desirable than card organization networks for these transactions, according to banks.
- Respondents felt that funds transfers could also require transaction processing networks such as those operated by card companies.
- Some bankers have mentioned, however, that they would investigate the use of the Internet for some types of advanced ATM or kiosk operations, such as supplying information about lending, mortgage, savings, or investment services, and obtaining prospects' name, address, and other data.

Bank respondents did note that steps could be taken with certain types of credit and debit card usage such as those utilized by Cybercash to support payment for purchases on the Internet.

Retail electronic banking services that use computer based-telephone systems will probably continue to be entered into bank or vendor phone networks, but the supply of information to clients as a result of inquiries by phone will be handled on the Internet by some banks.

B

Trends, Drivers, and Inhibitors of Internet Use

1. Trends in Use of the Internet for Retail Electronic Banking

The trend for rapid increase in Internet use to support retail electronic banking is most intense in the U.S., driven not only by plans for home banking and sale of banking services such as lending, but also by the desire of many banks to have a home page..

- Although banks are not as certain about the growth rate of either specific services that use the Internet or the Internet itself, outside the U.S., there is an expectation that use of the Internet for banking services will rise swiftly.

- Banks throughout the world think that the growth of Internet use will be accompanied by rapid improvements in Internet tools and security, as shown in Exhibit V-2.

Exhibit V-2

**Trends in Use of the Internet for
Retail Electronic Banking**

Trends Identified by Banks in Relation to the Internet	Average Level of Response by Banks
Rapidly increasing use of Internet for home banking and advertisement	4.6
Initiation of other services including sales of lending, mortgage, and investment	3.8
Improvement of Internet tools and security	3.6
Users switching from network services like America Online to the Internet	3.2

1 = Low and 5 = High

Source: INPUT

Banks feel that the trend of increasing Internet use will be accompanied by a switch from network service providers like America Online to the Internet. Bank respondents in the U.S. have more confidence in this trend, but banks elsewhere mentioned it as well. Some banks in Europe thought that carriers, phone companies, or government agencies in certain countries would try to prevent banks from using the Internet for certain types of banking business.

2. Market Drivers for Use of the Internet for Retail Electronic Banking

Although banks mention bank image and costs as reasons for offering retail services on the Internet, the foremost reasons reported for using the Internet are to reach bank customers and take advantage of increasing use of the Internet, as indicated in Exhibit V-3.

Exhibit V-3

**Factors Driving Internet Use for
Retail Electronic Banking**

Drivers Identified by Banks	Average Level of Importance to Banks
Number of Bank Customers Using the Internet	3.9
Increasing Purchases on the Internet	3.7
Relative Cost of Using the Internet	3.5
Ability to Penetrate Many Markets	3.4
Promotion of Bank Image	3.2

1 = Low and 5 = High

Source: INPUT

Bank respondents report that a home page or services on the Internet provide opportunities to attract new depositors and promote the image of the bank. Banks also realize that the Internet offers a more economic means of providing connectivity to users of banks' retail banking services.

- Some banks mentioned that the Internet provides a source of aid for users, which many prefer. If users encounter problems in connecting to the bank or with their equipment, they will often consult other people on the Internet as sources of information or for help with problems.
- Internet users are better on-line users than many users of other networks, according to some banks. This saves banks some of the work involved with solving customer problems that occur in the process of using a network service.

3. Factors That Inhibit Internet Use for Retail Electronic Banking Services

Bank respondents do express concerns about factors that could inhibit their use of the Internet. The leading factors that are mentioned are questions of security and limitations in foreign networks that must rely on phone networks built many years ago. As shown in Exhibit V-4, bank respondents are also worried about the time and cost required to use facilities in some locations.

Exhibit V-4

Factors Inhibiting Internet Use for Electronic Retail Banking

Factors Mentioned by Bank Respondents	Average Level of Importance to Banks
Questions of Security	3.7
Limitations of Country Networks	3.5
Development Time/Cost	3.2
Problems that Users Can Encounter	3.1
Fear of Obsolescence	2.8

1 = Low and 5 = High

Source: INPUT

Although banks feel that security problems will lessen over time, and it will become easier and less costly to use the Internet in the future, present uncertainties are delaying or inhibiting the Internet activities of some banks. There is also worry that steps taken now might prove insufficient in the near future, which would cause the rate of obsolescence to be high.

C

Analysis of Benefits of Internet Use for Retail Electronic Banking

The benefits that banks expect to obtain from use of the Internet for retail electronic banking are not led by cost savings or increased revenues, although these items are listed among the benefits. The leading benefits expected by banks are customer satisfaction, new accounts, and the ability to gain more business, as illustrated in Exhibit V-5.

Exhibit V-5

Benefits of the Internet for Retail Electronic Banking

Benefits of Internet Use as Reported by Bank Respondents	Average Level of Importance to Banks	
	1996	2001
Meet Customer Demand for Service	4.3	4.6
Gaining New Accounts	3.8	4.2
Cross-Selling Business	3.7	4.1
Savings in Branch and Operations Costs	3.4	3.8
Meeting Competition	3.1	3.6
Fees/Revenue	2.7	3.1

1 = Low and 5 = High

Source: INPUT

Bank respondents make it clear that they want to take advantage of the Internet to keep and gain customers. They report that there is a danger in falling behind competitive efforts - others might develop better means of attracting accounts.

- Many banks, particularly in the U.S., are impressed or even surprised by the success of the Internet, as one large regional bank expressed it, and they feel that it is mandatory to think about using the Internet. The CEO of a small community bank said that his bank must be prepared to use the Internet in the near future, even if the bank must piggyback on the offering of a larger correspondent.
- Several banks noted that people using the Internet are good prospects: they are interested in retail electronic banking and, in general, they have financial resources.

D

Possible Problems and Solutions

Bank respondents report that operational problems, including delays or help that banks might be required to supply to customers, are major problems experienced or anticipated with the Internet, as indicated in Exhibit V-6.

- Depositors have told banks that they don't know whether some delays are their fault or due to problems with instructions on their Internet home page.
- Depositors are also uncertain about the operational instructions they have and find need to review them with their banks.

Exhibit V-6

Possible Problems with Internet Use

Problems Reported by Bank Respondents	Average Rating of Importance to Banks
Operational Problems Including Delays in System Response	3.9
Amount of Aid That Customers Require	3.5
Customer Worry About Security	3.3
Keeping Offerings Up to Date	2.8

1 = Low and 5 = High

Source: INPUT

In order to provide customers with the type of aid required to reduce their problems and to control the total amount of aid they may request, it is necessary to analyze the types of problems that occur and invest in help facilities that might include automated E-mail messages and a telephone desk.

The concern of customers or prospects (and banks) about security must be addressed with research as well. Techniques are in development that offer promise in establishing higher levels of security. Banks must maintain knowledge of developments in this area through research publications, contact with consultants, or news items in bank publications.

Banks also feel that offerings that utilize the Internet must be kept up to date because Internet users are sensitive to differences in service. This type of problem must be addressed through research publications or regular review of articles or studies in bank publications.

E**Forecast of Internet Use for Retail Electronic Banking**

Although only 3% of U.S. banks are expected to utilize the Internet for retail bank offerings in 1996, a high percentage of banks are expected to utilize the Internet by 2001, as shown in Exhibit V-7.

Exhibit V-7

**Forecast of Internet Use for
Retail Electronic Banking**

Year	Percentage of Banks Using the Internet for Retail Electronic Banking
1996	3
1997	10
1998	30
1999	55
2000	75
2001	90

1 = Low and 5 = High

Source: INPUT

Internet use is expected to grow rapidly for home banking, remote lending, mortgage, investment, and other offerings, and possibly for Smart Card applications. Some banks plan to use the Internet to support retail business through E-mail and home page information.

Worldwide use of the Internet cannot be estimated now because of the preliminary state of many plans. However, bank respondents felt that use would rise to a level of about 80% in five years.

F

Importance of Vendor Products and Aid for Internet Use

Although banks feel that use of the Internet will reduce costs, they expect to make use of and spend for vendor assistance and products, as illustrated by Exhibit V-8.

Exhibit V-8

Importance of Vendor Products and Aid for Internet Use

Products and Services that Banks Plan to Utilize and Vendors Expected to Supply Services	Rating of Importance to Vendor Products/Aid in Use of the Internet
Software to develop and modify applications on Internet home pages (from vendors like Microsoft, Sun, or NetScape)	4.1
Application software for PCs that makes use of the Internet for communications (from vendors like Microsoft, Sun, or Novell)	3.9
Outsourcing services that handle banking Internet applications (from vendors like EDS, ALLTEL, and FIserv or a large Bank)	3.7
Multimedia for use on the Internet (from vendors like Microsoft and Director)	3.4

1 = Low and 5 = High

Source: INPUT

Banks are becoming more active in planning retail electronic banking services they will offer in the future. Some expressed enthusiasm for vendor services. Such services are viewed as a means of dealing with new technology as well as offering services more rapidly.

(BLANK)



Impact of Retail Electronic Banking on Bank Operations

A

Impact on Check Processing, DDA, and Branch Operations

1. Overview

This section is oriented toward information provided by U.S. banks, but the exhibits and observations reflect a global outlook. In general, banks report that retail electronic banking is expected to reduce paper check volume as well as work in branches and central office operations.

- The work in branches will be reduced because many depositors will use ATMs in branches or external locations to obtain cash or make deposits instead of using teller windows.
- Increasing use of credit and debit cards, as well as Smart Cards with a stored money value, is also expected to reduce check volume and branch and teller work.

Increasing use of home banking, computer-based telephone services and preauthorized checks by a bank will also increase the number of electronic items and expedite posting of some in-house accounts, but many of the checks that are eliminated by those services will not be “on-us” items. There will be less savings of operational work for those items.

Home banking and telephone services or related services can also reduce the number of account transfers that would be handled at teller windows.

Bank marketing and data acquisition can be handled via the Internet or by advanced ATMs or kiosks. The latter can also handle payment for personal loans, savings, investment, and insurance offerings. This can save work at a branch and personnel expenses.

The changes mentioned above will necessitate changes in check and DDA processing, as well as in automated and manual clerical systems.

2. Trends in Check Processing, DDA, and Branch Operations Resulting from Retail Electronic Banking

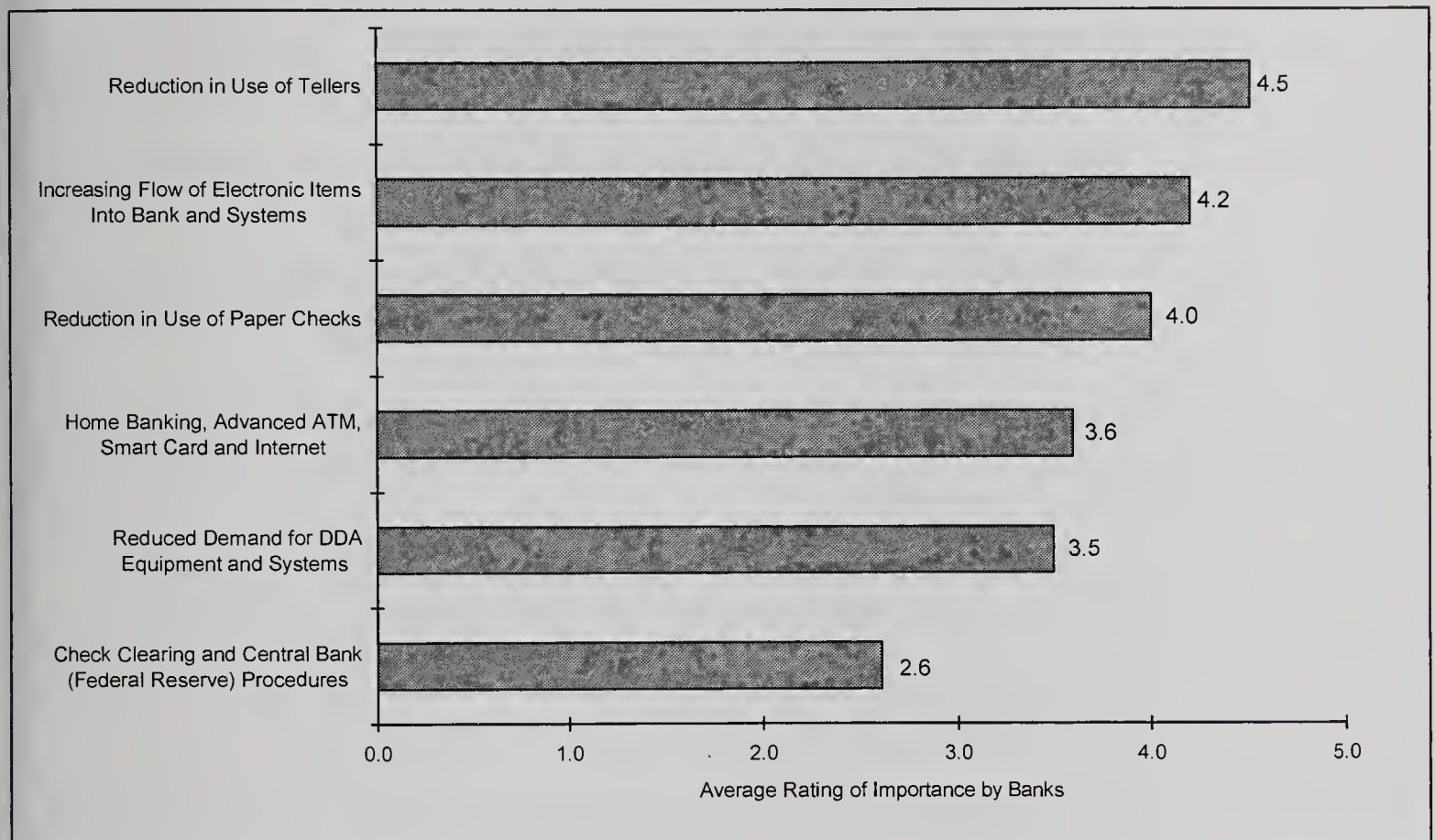
Banks report that they expect changes in operations and administration as well as a decrease in paper checks as a result of the growing use of retail electronic services.

- Deluxe Data stated in February 1996 that it expects to see total check volume decline by 1997.
- The reduction in paper check volume, which will be analyzed later in this chapter, is materializing as a result of the success of these services.

Trends for check processing, DDA, and branch operations that banks anticipate focus on the changes resulting from the impact of retail electronic banking and from a reduction in check volume and operational work, as illustrated in Exhibit VI-1.

Exhibit VI-1

Check Processing, DDA and Branch Trends Resulting from Retail Electronic Banking



1 = Low and 5 = High

Source: INPUT

Banks expect changes in central bank functions stimulated by the use of retail electronic banking that could lead to changes in clearance and movement of items, but do not agree on what might occur. A small percentage of banks suggested that electronic items would eventually replace the movement of checks or images. These items, with some encryption, would provide proof of payment to the check or payment originator.

- Some U.S. banks mentioned that they expect to receive an increasing number of electronic items in the future, either as ACH items, items from Smart Cards, items from other financial institutions, or items truncated by the Federal Reserve.
- Banks also expect to receive electronic items from Internet transactions - either indirectly through a card organization or vendor, or perhaps, directly from the Internet.

Vendor innovations in payment can also reduce the use of checks and/or change the flow of payment.

- The Checkfree payment system replaces payment by checks, in many cases, by payment with electronic items.
- The use of the credit card option for payment of the vendor, Cybercash, to pay bills to Internet vendors could result in the flow of payment items from an Internet server through a card organization network.
- The use of DigiCash combines the flow of payment information on the Internet with the use of a bank account.
- Mondex, the electronic money products of Visa, MasterCard and Eurocard, or the EMS product of Citicorp can reduce the use of checks and cash as well as change the flow of payment.

Many banks have not considered a plan for electronic payment or for payment on the Internet, but a number of respondents thought that it would become a necessity.

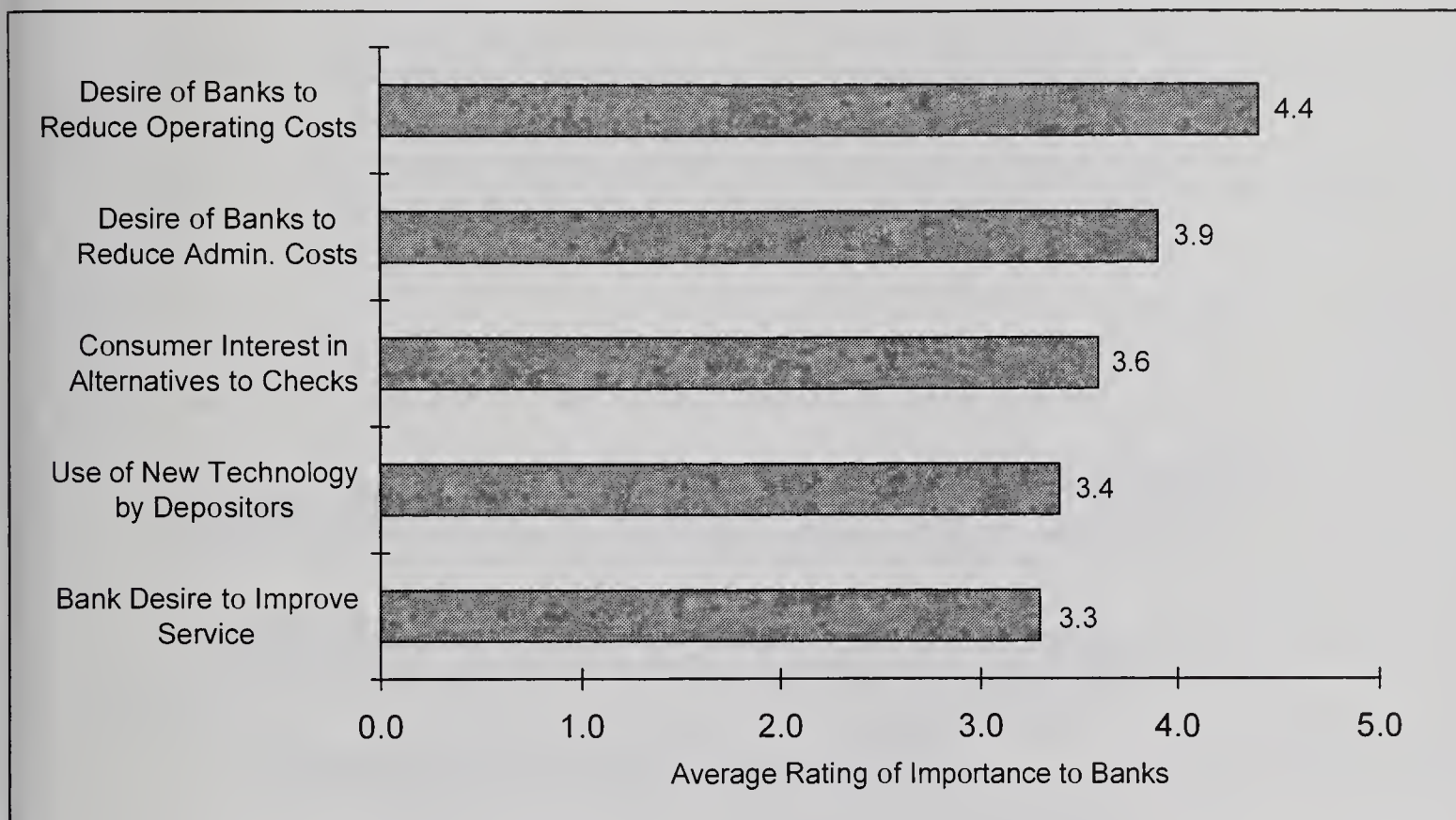
Respondents pointed out that banks will find it possible to settle items against accounts at their own or other banks, but could need vendor aid to deal with the supplementary work that some payment schemes require, such as handling the software involved with the use of debit cards as envisioned by Cybercash, or payment tokens (E-cash) as envisioned by DigiCash.

Bank respondents feel that the use of electronic money, as mentioned above, will require more consideration. If the electronic money is accountable, as envisioned by the card vendors or Citicorp, banks will be much more inclined to accept payment in it. However, accountable electronic money could be subject to regulatory action, according to the Federal Reserve.

a. Market Drivers of Change in Check Processing/DDA

A number of factors are mentioned as drivers for change in check processing/DDA, including the desire to reduce costs and improve services to depositors. Some banks report that customers are expressing more interest in the elimination of checks, where possible. The factors to which banks give most weight are summarized in Exhibit VI-2.

Exhibit VI-2

Factors Driving Change in Check Processing and DDA

1 = Low and 5 = High

Source: INPUT

Banks report that recent developments in technology and retail services have raised the possibility of using alternatives to checks. This has been of interest to consumers as well as to banks.

- Consumers have told banks that it takes less work and record keeping to pay bills by phone, use home banking, and give credit card numbers to pay for catalog items. Consumers have also told banks that it would be good if all payments could be made by these means so that it was possible to write few or no checks during the year.
- Several banks have discussed the use of home banking using PFS (personal finance software) with selected depositors and found that a majority would like to control all payments this way and eliminate paper checks.
- Banks report that the requests or demands of a vocal group of depositors who want the bank to support electronic service is a major consideration.

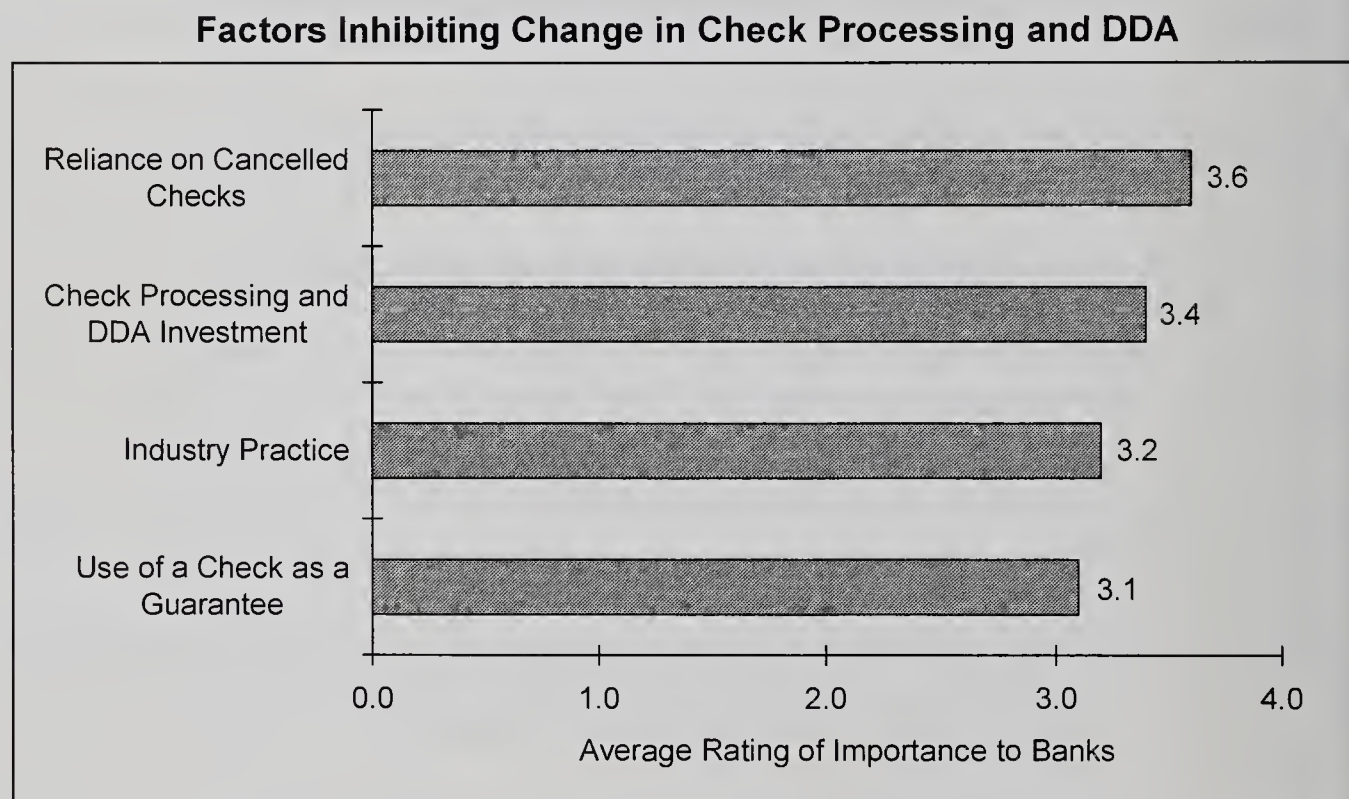
Bankers are also interested in phone-based services that would reduce operations tasks and staff as well as support the use of home banking and

other services. As described in Chapters III and IV, developments in computer-based telephone services are addressing these objectives.

b. Market Inhibitors of Check Processing and DDA Changes

Banks pointed out that there are factors inhibiting the elimination of checks, such as the habits of some depositors and the orientation of operations departments and industry groups toward a check-based universe. This is illustrated in Exhibit VI-3.

Exhibit VI-3



1 = Low and 5 = High

Source: INPUT

Several banks felt that plans of the Federal Reserve in the U.S. were still driven by the use of checks. They pointed to the work on check imaging as one example.

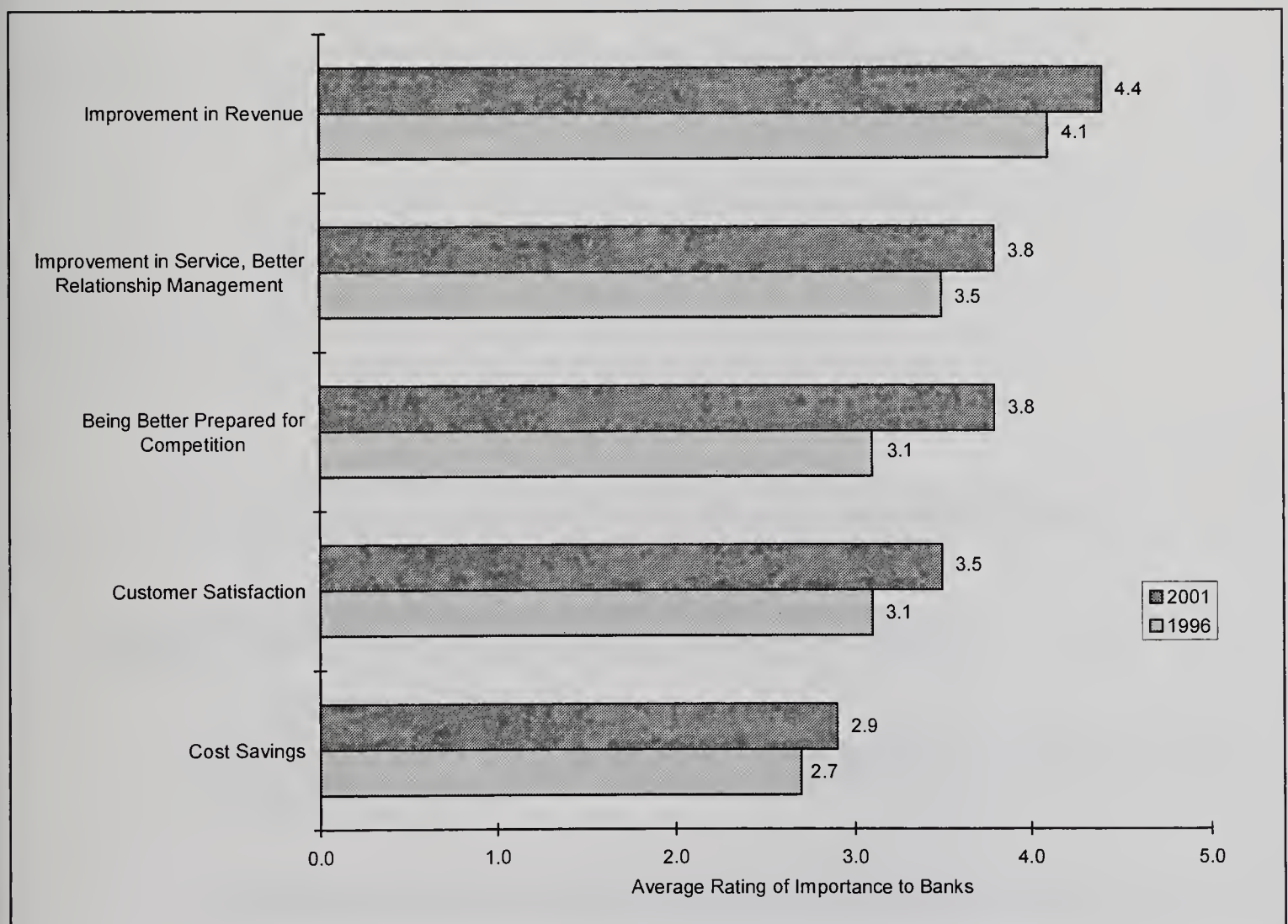
Some vendors mentioned that discussions with banks about electronic items in place of checks suggested that a number of banks are still planning and analyzing the works in terms of metrics based on numbers of checks.

3. Benefits Resulting from Changes in Check Processing/DDA Operations

Banks expect changes in check processing and DDA brought about by retail electronic banking to benefit both depositors and banks. The principal benefit expected by banks is the reduction of costs, a factor of great importance to banks. Banks also expect to be better prepared to compete with improved services and to gain more fees and revenue from handling electronic items, as indicated in Exhibit VI-4.

Exhibit VI-4

Benefits Reported by Bank Respondents



1 = Low and 5 = High

Source: INPUT

Banks reported that an increase in customer satisfaction would be gained by offering services that reduced the use of checks and the time and cost associated with mailing. They also feel that replacement of check use with services such as personal finance software (PFS) and computer-based telephone services will also increase customer satisfaction. Most banks hope

that these benefits will enable them to increase fees for electronic banking offerings.

- Not all banks are counting on fees. Surveys of consumers by several large banks indicate that banks may have to reduce fees for electronic banking services in order to increase the speed with which bank customers move to them.
- A group of large money center and regional banks reported that they expected an increase of lending and investment business with clients to pay for the use of electronic banking. They also expect cost reduction to contribute to the payback.

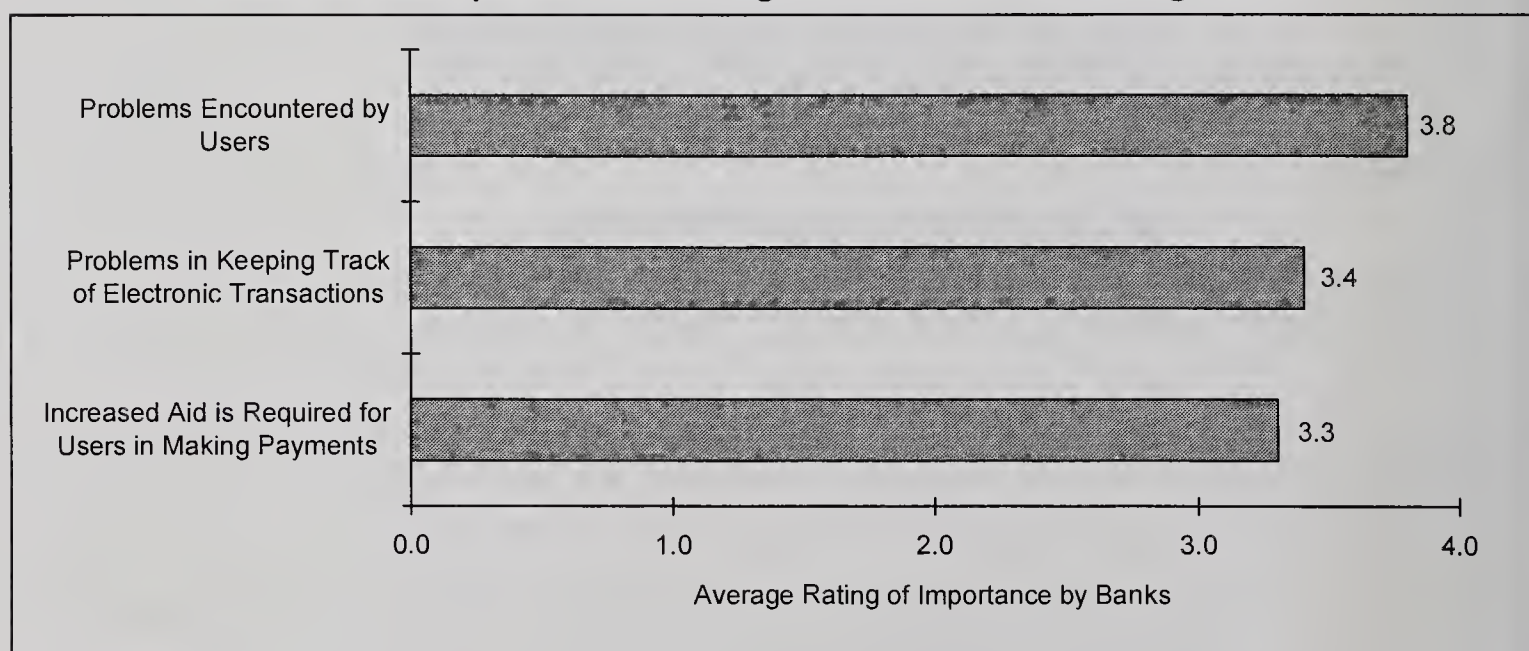
Banks emphasize that changes in check processing and DDA should make it possible to increase the quality of bank operations and that this will improve relationship management as well as retain or gain new accounts.

4. Possible Problems and Solutions

As illustrated in Exhibit VI-5, the most significant problems reported by banks at present include the problems encountered by depositors in making payment and keeping records of payments. The latter is due, to some extent, to the fact that many depositors are having trouble with the personal finance software (PFS) programs they are using.

Exhibit VI-5

Problems Anticipated with Changes to Check Processing and DDA



1 = Low and 5 = High

Source: INPUT

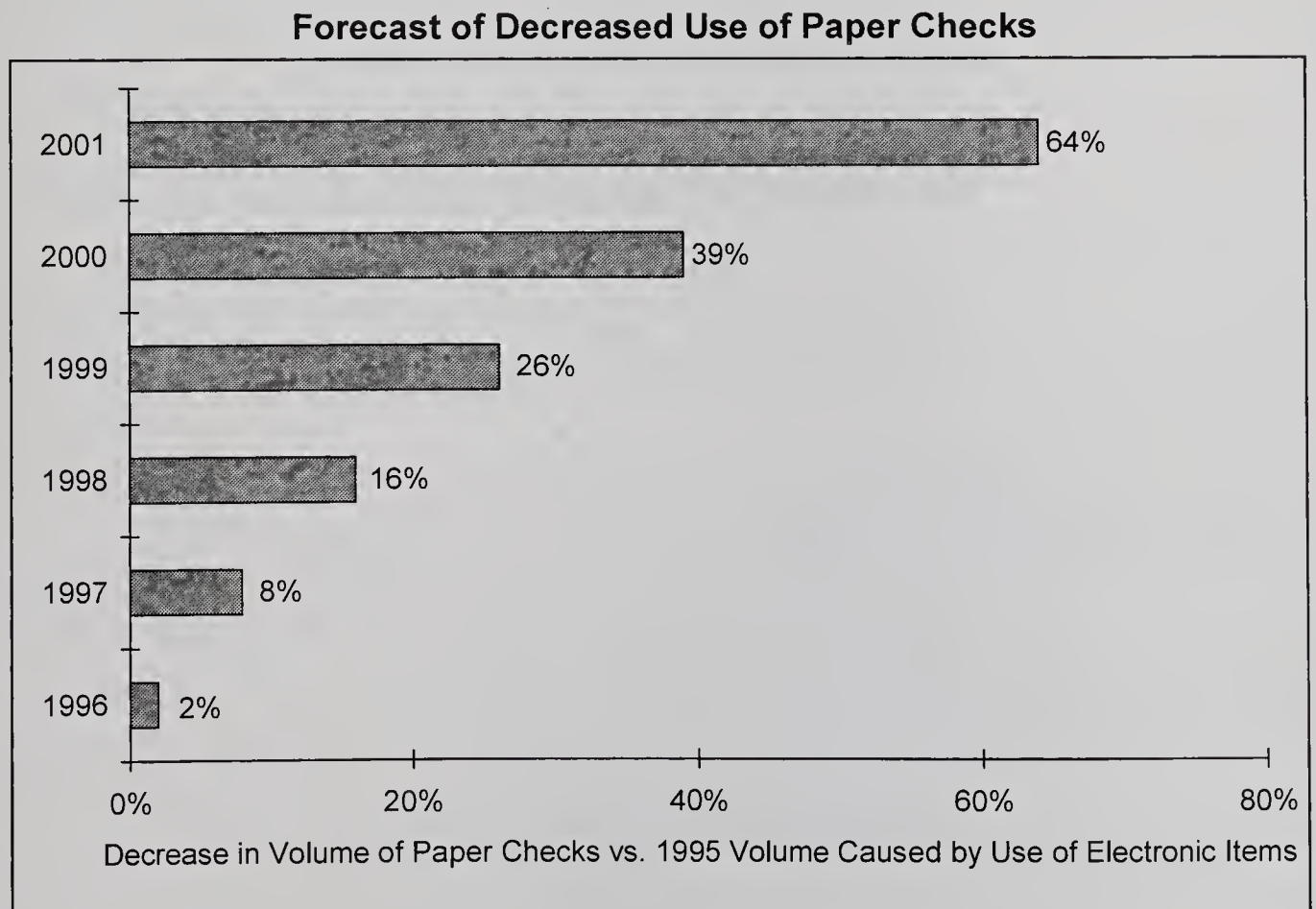
The problems users are encountering and the aid they are seeking in relation to the use of electronic banking makes it necessary for banks to analyze the type of help that is required.

- The PFS products that some banks are using should be reviewed. One major banking vendor of SI services commented that several PFS products in use were too complex for average users.
- Analysis of the use of help desk functions is needed to decide how to supply assistance. Some banks are not supplying adequate assistance for home banking, new ATM devices, or other electronic services, according to their own staff members.

5. Expected Reduction in Processing of Paper Checks

As a result of the use of electronic items, banks expect the use of paper checks as a percentage of total check payment volume (checks plus electronic items) to decrease between 1996 and 2001. Discussions with banks suggested that the decrease could be measured by comparing the number of paper checks in the next five years to the volume of paper checks in 1995, as indicated in Exhibit VI-6.

Exhibit VI-6



1 = Low and 5 = High

Source: INPUT

Banks expect the percentage of paper checks in annual check volume to decrease by a small amount in 1996 and by almost two-thirds of total 1995 volume by 2001.

- A group of banks, mostly larger ones, expect the decrease to be more rapid by 2001.
- Some banks would like to see more industry and/or Federal Reserve action taken to increase the use of electronic items.

B

Impact on Card and ATM Operations/Administration

1. Overview of Card and ATM Services Affected

Even though there may not be an integrated strategy, many bank respondents are speculating about the changes that are taking place in retail banking. They expect to see a fall-off in retail paper check volume, accompanied by increases of work and expenditure in other areas.

- Particularly in the U.S., banks are deploying additional ATMs inside banks and at selected outside locations in order to reduce teller work (checks for cash, deposits, and inquiries) as well as meet the needs of depositors.
- Several bank respondents reported that the operations and administrative expense of ATM operations will be increased in order to reduce branch expense.
- Banks are also planning or carrying out the development of advanced ATM (or kiosk) capabilities to satisfy customer needs, from cash withdrawal and payment initiation to loan application and investment, without making it necessary to visit branches.

New facilities at malls or stores, including grocery stores, will require administrative and operational staff.

- There will also have to be administrative and help personnel at central offices to support these remote facilities. An outsourcer may be used to support these functions, of course.
- Bank respondents feel that the costs of outsourcer or personnel required to support remote facilities will be less than the savings in branch operations and staffing that is possible.

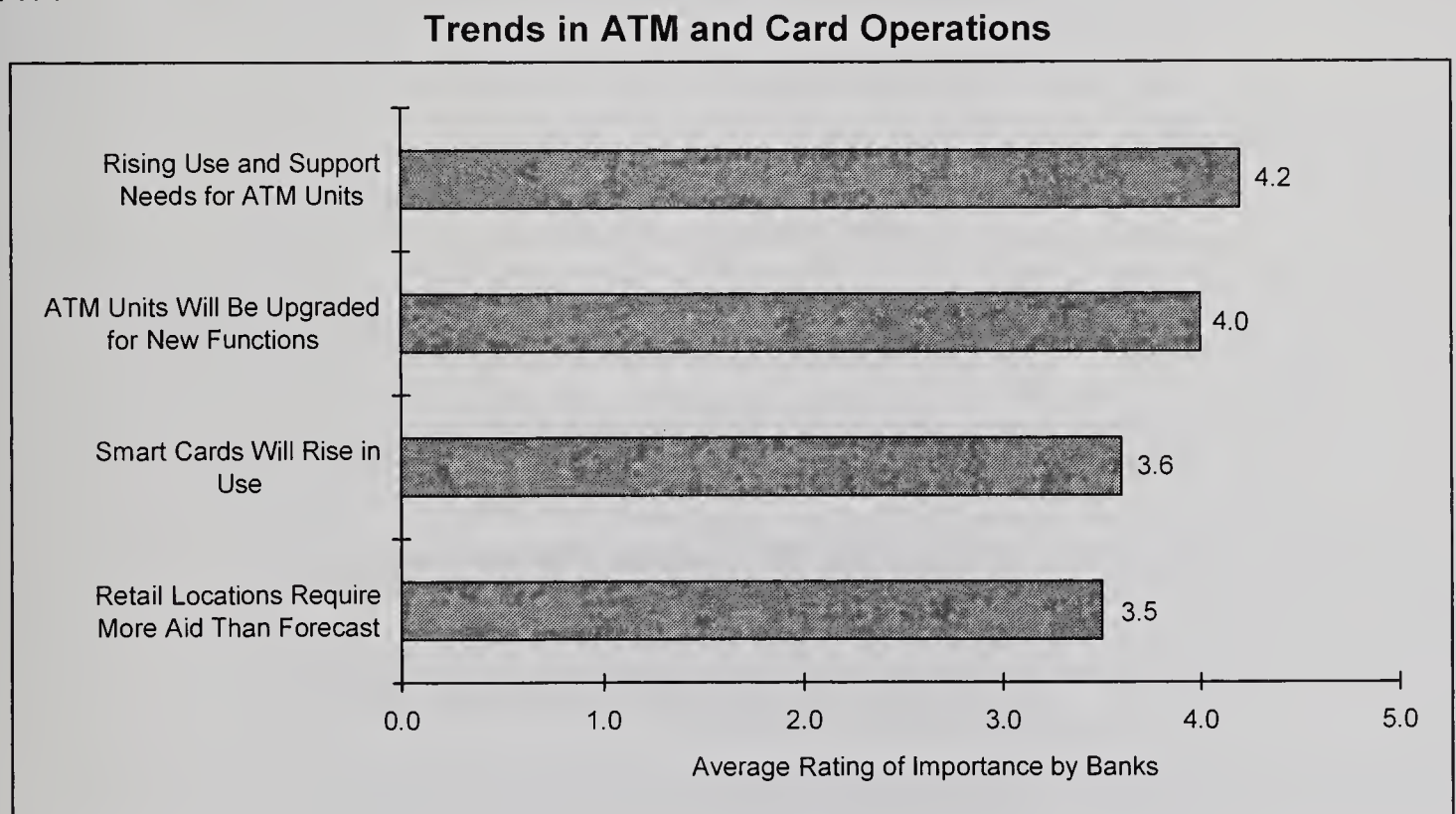
Some banks are also investing in debit, credit, and Smart Card capabilities, with the objective of reducing use of traditional branch facilities and staff as well as satisfying needs of depositors.

2. Trends, Drivers, and Inhibitors

a. Trends

As shown in Exhibit VI-7, bank respondents in the U.S. and elsewhere foresee rising administrative and operational staff needs as a result of rising ATM and credit/debit card use.

Exhibit VI-7



1 = Low and 5 = High

Source: INPUT

There is also an expectation (particularly in the U.S. and Europe) that Smart Cards will reduce branch activity and staffing by reducing needs to obtain cash from a teller.

- Citicorp, Chase, Visa, and MasterCard will start a test in New York in the Fall of 1996 to test whether consumers would find it more convenient to use a Smart Card than pocket money for incidental purchases.
- Greater Smart Card use will require support personnel and expenses at bank operations offices, as well as expense for developing automated systems for the product, the creation of Smart Cards, and modifications to ATMs so that the cards can be updated with more cash.

- The use of Smart Cards will also be dependent on the willingness of consumers and merchants (who acquire readers for Smart Cards) to pay fees for such use.

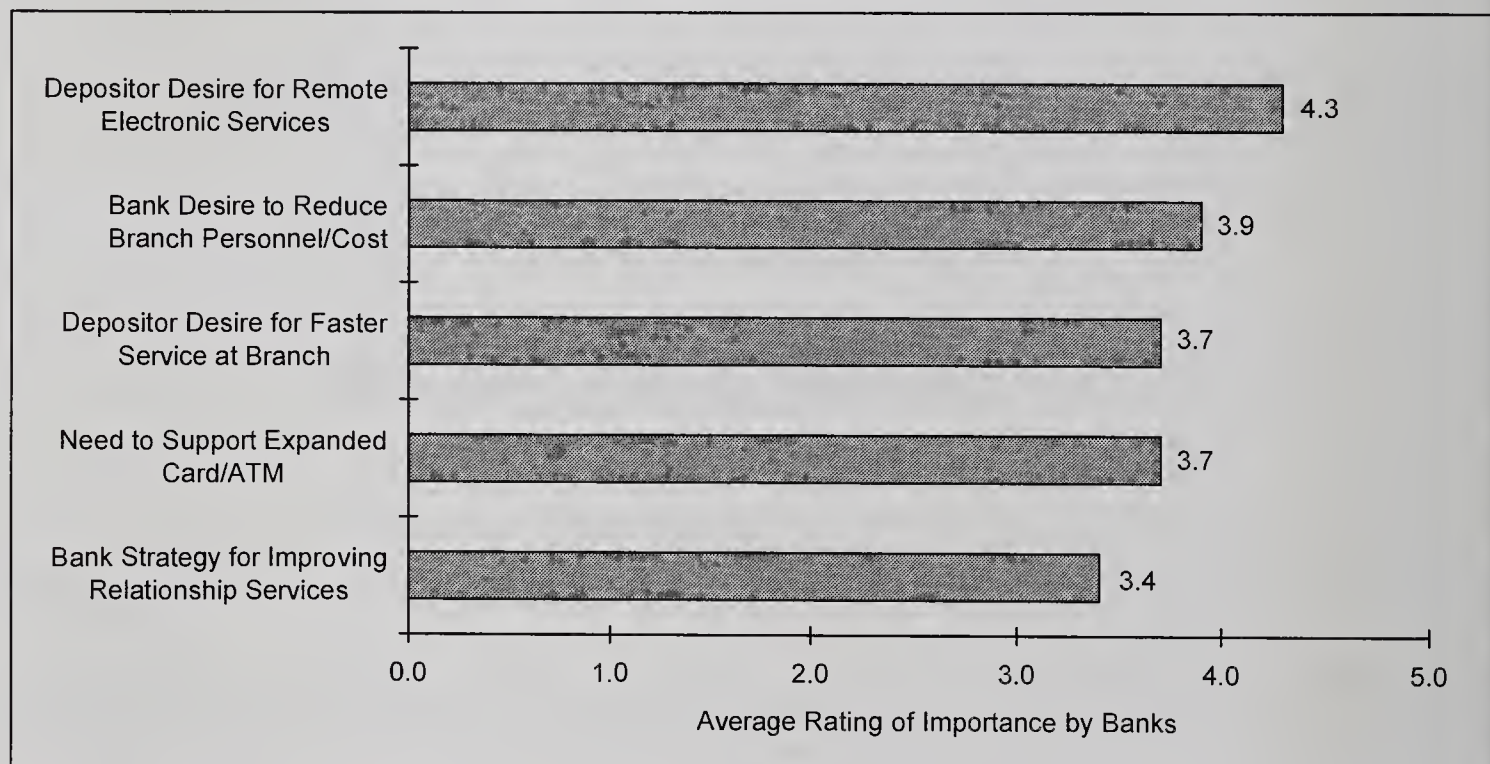
Banks also foresee that the use of advanced ATMs and kiosks with card products will create a need for more sophisticated help capabilities. More planning and training of a help desk staff and automated assistance is being explored both in the U.S. and elsewhere.

b. Forces Driving Change in Card and ATM Operations

Although banks admit they are vitally concerned about reducing costs in bank operations, bank respondents in the U.S. and other countries feel that the interest of bank customers in expanding remote services is the leading driver for change in card and ATM operations, as indicated in Exhibit VI-8.

Exhibit VI-8

Forces Driving Change in Card and ATM Operations



1 = Low and 5 = High

Source: INPUT

Bank strategies for improving service are not fully spelled out at over 50% of banks, but many banks report that improvement involve use of remote electronic products and strengthening of operations to support these products. This strategy is designed to improve relationship management and tie customers more closely to the bank.

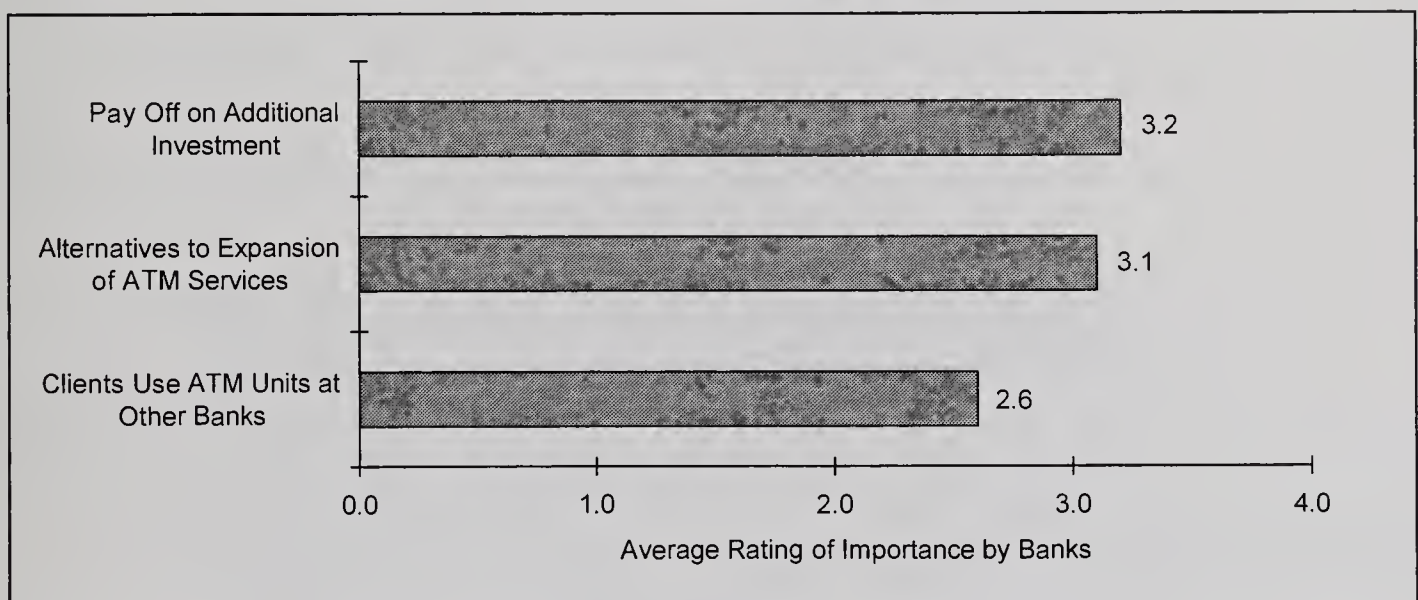
- The need to support the use of electronic banking services is exemplified by the issues facing banks with expanding ATM use. Problems with the physical operation of units, customer inquiries about ATM services and problems, possible fraud, or injury to units are constant.
- Although branch and operations personnel supporting check processing and DDA operations may decrease, further strength must be developed in card and ATM service units.

c. Factors Inhibiting Change in Card and ATM Operations

Some banks are not sure that plans for expanded use of card and ATM products will have a payoff. Several banks report that they will consider alternatives to these investments, as indicated in Exhibit VI-9.

Exhibit VI-9

Factors Inhibiting Change in Card and ATM Operations/Administration



1 = Low and 5 = High

Source: INPUT

One of the alternatives to expanded ATM and card operations is to outsource operations to a vendor. Another alternative is to consider a strategy that allows bank customers to utilize the units of other banks for some needs. In addition, banks can take steps to utilize advanced ATM units or kiosks that will expand revenue opportunities for ATM installations.

3. Benefits of Changes in Card and ATM Operations

The chief benefits of changes in card and ATM operations/administration are reported to be customer satisfaction and net reduction in costs, according to bank respondents. However, benefits are also expected in customer support,

additional revenues/fees, and additional business, as illustrated in Exhibit VI-10.

Exhibit VI-10

Benefits of Changes in Card and ATM Operations/Administration

Benefits Reported by Banks	Average Rating of Importance by Banks	
	1996	2001
Customer Satisfaction	4.3	4.3
Net Reduction in Cost	3.9	4.1
Better Support for Retail Electronic Banking Services	3.5	3.9
Revenues and Fees	3.5	3.7
Additional Business	3.4	3.7

1 = Low and 5 = High

Source: INPUT

Some banks also mentioned the promotion of bank image or encouragement of the use of additional technology as benefits.

4. Possible Problems of Expansion of Card and ATM Operations/Administration

Costs of support, providing adequate help service and fraud or criminal actions are the most significant problems reported by banks, as shown in Exhibit VI-11.

Exhibit VI-11

Problems Reported With Expanded Card and ATM Operations

Problems Reported by Bank Respondents	Average Level of Importance to Banks
Costs of Supporting Card and ATM Services	3.0
Providing Help Services	2.9
Concern Over Possible Fraud/Criminal Activity	2.6
Having Sufficient Expertise Available	2.3

1 = Low and 5 = High

Source: INPUT

Some banks pointed out that research and planning is needed to control costs, provide high-quality help service, and educate customers about the dangers of fraud and criminal activities. Several banks noted that use of outsourcers or certain network services providers could provide more security and cost control or transfer costs to users.

5. Expansion of Card and ATM Operations

Less than 10% of banks report a significant increase in operations and administrative activities supporting card and ATM use, at present. However, by 2001, over 80% of banks expect to have a significant increase in costs and personnel to support these functions.

6. Importance of Vendor Products and Assistance

Over 50% of banks expect to utilize vendors to support increased use of card and ATM services. The types of vendors that were mentioned by banks are listed in Exhibit VI-12, together with names of some vendors mentioned by banks as examples of the vendors they might use.

Exhibit VI-12

Use of Vendor Products and Services to Support Card and ATM Operations

Vendor Products and Services	Rating of Importance by Bank
SI, professional services, or outsourcing aid from firms with experience in card systems such as EDS, CGS, or Axime	4.1
Network services and aid from card organizations like Visa and MasterCard	3.9
Card processing services like FFMC, Total, BIK, and Sligos	3.7
Firms with general banking knowledge such as Siemens Nixdorf, Unisys, and IBM	3.2

1 = Low and 5 = High

Source: INPUT

C**Impact On Operations Units Supporting Lending, Mortgage, Investment, and Other Retail Services By Remote Means****1. Overview**

These products have begun to be sold on the Internet and other network or on-line services. A bank customer or network user can review bank offerings, ask questions, supply data by E-mail or an input means designed by banks or vendors, or conclude an arrangement that may be dependent on off-line signing of documents, at present.

- Wells Fargo, First of Chicago and NationsBank have initiated or indicated interest in offering these services.
- America Online has announced sales of mutual funds on its network service.

These offerings could also be supplied through home banking or computer based telephone types of services.

A customer could also utilize a group of integrated electronic services in connection with a bank offering. An investment alternative could be explored on the Internet, investigated further on a computer-based telephone service, where information about the customer might be obtained and recorded, and concluded at an ATM device in a mall where the customer indicated the account should be debited. Andersen Consulting has pointed out the need for integration of retail electronic banking services to make this possible.

Although remote delivery of services will grow, there is uncertainty about the impact that will be made on operations and the administrative units that would be necessary to support them.

2. Trends, Drivers, and Inhibitors Having an Impact on Operations Units Handling Lending, Mortgage, and Other Retail Services

a. Trends

Although banks feel that the trend for growth of remote services is promising and there is little competition today, they recognize that competition will eventually be significant, as shown in Exhibit VI-13.

Exhibit VI-13

Trends in Impact of Remote Lending, Mortgage, and Other Services on Operations

Trends Identified by Banks	Average Rating of Importance by Banks
Introduction and Growth of Remote Services	3.8
Increasing Competition for Remote Services	2.6
Growth of Support Requirements for Remote Services	2.6

1 = Low and 5 = High

Source: INPUT

The success and profitability of remote lending mortgage and other services will lead to increasing competition by banks and nonbanks. Such competition could lead to additional features such as bidding (or even a reverse auction) to win mortgage business and even some large, secured personal loans. The competition and additional features will require operational and administrative support. This support should be less than is now required in branch and home office or vendor support in the aggregate, but some banks may find that it costs them more, because they started late or cannot obtain enough business to cover development costs.

b. Forces Driving Change in Operations Supporting Remote Services

As shown in Exhibit VI-14, the growth of remote services and their revenue potential as well as the possibility of lowering operational costs make these services interesting to banks.

Exhibit VI-14

Forces Driving Change in Operation of Remote Services

Forces Identified by Banks	Average Importance Reported by Banks
Growth of Remote Services	4.2
Bank Desire to Reduce Branch and Home-Office Operations Costs	4.1
Revenues That Remote Services Can Gain	3.4
Sale of Additional Services, Cross-Sales	2.8

1 = Low and 5 = High

Source: INPUT

These factors are more apparent in the U.S. market at present, but the scenario discussed here is anticipated by banks in other countries.

c. Inhibitors

Bank uncertainty about the profitability of remote lending, mortgage and other business, as well as their reluctance to change lending and mortgage practices, could inhibit change in the operations presently handling these functions as is shown in Exhibit VI-15.

Exhibit VI-15

Factors Inhibiting Change in Operation of Remote Services

Inhibiting Factors Identified by Banks	Average Rating of Importance by Banks
Bank Uncertainty About Profitability of Remote Lending and Other Business	3.8
Bank Reluctance to Change Lending and Mortgage Practices	3.3
Questions About What Support Would Be Required for Remote Lending and Other Services	2.6

1 = Low and 5 = High

Source: INPUT

Some banks felt uncomfortable or uncertain about the type of support or contact that would be required to support clients of remote services, and this could also inhibit their willingness to make changes in operations to support remote products.

3. Analysis of Benefits

Bank respondents feel that remote services and operations and administration units supporting them can please bank customers as well as gain revenues and save costs, as indicated in Exhibit VI-16.

Exhibit VI-16

Possible Benefits of Changes in Operations to Support Remote Services

Possible Benefits of Operations Supporting Remote Services Reported by Banks	Average Rating of Importance by Banks	
	1996	2001
Ensures Customer Satisfaction	4.1	4.3
Supports Remote Business and Revenues	3.9	4.1
Net Reduction in Costs	3.4	3.5
New Accounts	3.4	3.5
Additional Business	3.1	3.4

1 = Low and 5 = high

Source: INPUT

Banks will tend to build up support for operations and administration units supporting remote services because they feel these services have revenue potential and will entail less cost than branch and home-office units supporting the former services.

Banks also feel that well-supported remote services will attract new accounts and business.

4. Possible Problems and Solutions

Some banks are worried that they may not be able to provide adequate service or protection to clients of remote services, as indicated in Exhibit VI-17.

Exhibit VI-17

Problems Anticipated for Operational Support of Remote Services

Problems Anticipated by Bank Respondents	Average Rating of Importance to Banks
Not Having Adequate Support Available	3.6
Not Being Prepared to Provide Help for Clients of Remote Services	3.2
Protection Against Hackers, Fraud, or Other Criminal Actions	2.7

1 = Low and 5 = High

Source: INPUT

Banks that plan to launch remote services will have to perform research on the types of help needed by clients and the security that is needed. It also may be necessary to test services for a period of time before fully launching them. Companies that offer software and services to provide help or higher levels of security on the Internet should also be investigated, according to bank respondents.

5. Forecast of Changes in Operations and Administration to Support Remote Services

Less than 1% of banks claim to have made some change in bank operations for remote sale of lending or other services. However, over 50% of banks expect to make changes by 2001 to support remote sale of such services.

Banks are uncertain about the need for information services to support changes in operations to facilitate the remote services mentioned. Some banks did mention that outsourcers might be utilized to support these remote services.

6. Importance of Vendor Products and Assistance

As mentioned above, banks are uncertain about what services will be needed to support the remote offering of lending, mortgage, and other services.

- From the viewpoint of Internet use to market remote services, banks tend to consider vendors with Internet experience, as noted in Exhibit IV-43.

- In regard to operations and administrative systems to support remote services, banks tend to consider the use of SI, professional services, outsourcing, and network services vendors with past experience in banking, such as IBM, EDS, Andersen Consulting, Sligos, SG2, Siemens Nixdorf, Olivetti, and ALLTEL. The common denominator, here, is past experience with banking.

(BLANK)



Differences in Use and Impact of Retail Electronic Banking Among Global Regions

A

Differences in Use of Retail Electronic Banking

1. Overview

The information provided in this section has been developed from estimates provided by banks and vendors interviewed during this project. The main purpose of the exhibits that follow is to provide comparisons in the use of retail electronic banking services among four global regions and the U.S. The global regions include Europe, Asia (including Australia and New Zealand), Latin America (including all countries south of the U.S.), and the MiddleEast/Africa. Some comments will be made during the comparisons in relation to Canada's use of the services under discussion.

2. Differences in Forecast Use

As Exhibit VII-1 illustrates, a greater percentage of European banks presently offer certain retail electronic services based on their experience with these services.

- European banks have had over 11 years of experience with the Minitel terminals, which provided the first type of home banking as well as other services.
- The GIRO type of system that was utilized in a number of countries in Europe also provided experience with remote bill paying by phone and through the post office. Some bank respondents referred to this system in discussing pay-by-phone and home banking.

Exhibit VII-1

Estimated Use of Retail Electronic Banking Services in 1996

Retail Service or Product	Percent of Banks in Asia	Percent of Banks in Europe	Percent of Banks in Latin Am.	Percent of Banks in ME/Africa	Percent of Banks in U.S.
Home Banking	14	34	11	5	28
ATM, Advanced ATM, Kiosk	40	63	35	9	73
Smart Card	5	20	3	2	10
Credit Card	48	80	50	35	96
Debit Card	35	50	35	20	45
Computer- Based Telephone Service	15	36	18	10	34
Internet Use for Retail Electronic Banking Services	2	2	2	1	3

Source: INPUT

The use of the Internet for marketing specific services is not separated from other uses of the Internet, as the sale of remote services is just beginning to penetrate banks.

U.S. banks give an impression of being in the lead in retail electronic banking because the use of the PC and personal finance software in home banking is much more prevalent in the U.S., and the use of the Internet for banking and financial purposes is more common in the U.S. However, Europe is the leader in many areas of retail electronic banking, as shown above.

Use of retail electronic banking services in Canada is high in the same areas that it is in the U.S., but the percentage of banks involved tends to be 10% to 30% less.

By 2001, the use of retail electronic services will increase dramatically, as shown in Exhibit VII-2.

Exhibit VII-2

Forecast Use of Retail Electronic Banking Services in 2001

Retail Service or Product	Percent of Banks in Asia	Percent of Banks in Europe	Percent of Banks in Latin Am.	Percent of Banks in ME/Africa	Percent of Banks in U.S.
Home Banking	80	82	77	53	85
ATM, Advanced ATM, Kiosk	82	86	77	62	88
Smart Card	54	69	40	25	70
Credit Card	86	93	90	75	99
Debit Card	60	74	53	45	72
Computer-Based Telephone Service	36	58	40	33	64
Internet-Based Remote Services	23	41	20	12	50
Internet Use For Retail Electronic Banking Services	72	85	68	50	90

Source: INPUT

In Canada, use of the Internet for retail electronic banking is forecast to reach a level of 80% of banks by 2001.

The total use of the Internet in 2001 could involve a greater percentage of banks than is shown above. Some banks that specialize in corporate business might use the Internet for this business, but not for retail purposes. Other banks that don't use the Internet for retail business could use it for E-mail or research.

By 2001, the major method of conducting services for retail customers will be by electronic means.

- Bank respondents believe that all or practically all banks with retail business will have electronic services.
- Some small community banks and banks that specialize in certain types of business, such as trust accounts, and that handle bank instructions by phone, could have many fewer electronic retail services.

3. Impact of Retail Electronic Banking Services on Bank Performance

Many banks report that these services will have a positive impact on their performance, but the benefits they have achieved or anticipate do not generally stress revenues, cost reduction, or new accounts, as shown in Exhibit VII-3.

Exhibit VII-3

Highest Rated Benefits for Electronic Banking Services in the U.S.

Retail Service or Product	Revenues	Cost Reduction	New Accts. or Competition	Cross-Sales Additional Business	Customer Satisfaction. or Other
Home Banking			2	3	1
ATM, Advanced ATM, Kiosk	3	2			1
Smart Card	2			3	1
Credit Card	1		3		2
Debit Card		2	3		1
Computer-Based Telephone Service			3	2	1
Internet Service	3		2		1

(1 = First, 2 = Second, 3 = Third)

Source: INPUT

Exhibit VII-4

Highest Rated Benefits for Electronic Banking Services, Non-U.S.

Retail Service or Product	Revenues	Cost Reduction	New Accounts or Competition	Cross Sales Additional Business	Customer Satisfaction or Other
Home Banking		3	2		1
ATM, Advanced ATM, Kiosk		2		3	1
Smart Card	3	2			1
Credit Card	2			3	1
Debit Card		2	3		1
Computer-Based Telephone Service			3	1	2
Internet-Based Service	3		2		1

(1 = First, 2 = Second, 3 = Third)

Source: INPUT

Meeting the demands of customers or achieving customer satisfaction is the benefit most often cited for retail electronic banking services. Several respondents suggested that this benefit may often mean supplying services that are necessary or useful for holding on to customers.

- A group of larger banks feels that there is an issue that must be faced in regard to retail electronic banking. If many of the services are implemented to meet customers' demands, how do banks ensure that their business is profitable?
- Citibank has implemented or extended retail banking services in conjunction with reengineering plans that will use these services to achieve profitable operations.

Many banks report that it is a necessity to offer retail electronic services to stay in business. They react to the trends and drivers that they feel are in the marketplace, but don't see the necessity of developing a plan for introducing and upgrading these services so that their banks will be profitable.

B**Trends and Drivers of Retail Electronic Banking****1. Overview**

The prior section illustrated that many banks are implementing retail electronic services primarily to satisfy customers or meet their demands rather than to seek benefits of revenues, cost savings, and new accounts. Banks seem to be reacting to trends and drivers in their marketplaces.

2. Analysis of Trends and Drivers Across Regions**a. Trends in Retail Electronic Banking Services**

The major trends that bank respondents report are focused chiefly on the growth of these services and their functionality, as shown in Exhibit VII-5.

Exhibit VII-5

Leading Trends Reported in Retail Electronic Banking Services

Retail Service or Product	Trends in Asia, Europe, Latin America, Mid-East/Africa	Trends in North America
Home Banking	Trends to Launch Services and Use PC Rather Than Terminal	Launch or Upgrade Services; Use Personal Finance System Software, which Requires a PC
ATM, Advanced ATM, Kiosk	Growth in Usage and in Number of Services	Growth in Use and in New Locations Such as Stores
Smart Card	Growth in Plans to Launch Product and in Implementation of Pilots	Rising Interest in Use and in Implementation of Pilot Tests of Stored-Value Cards
Credit Card	Growth in Use and Expanding Competition	Nonbank Competition; Market Saturation
Debit Card	Growth in Use and Expanding Competition	Growing Acceptance by Consumers and by Merchants
Computer Based Telephone Service	Increase in Offerings and Functionality	Increase in Offerings and Functionality
Internet Based Services	Increasing Interest in Remote Banking and Internet Services	Rapid Growth; Integration of Internet Services With Other Retail Services

Source: INPUT

Banks in all regions mentioned that they were studying the trends taking place in retail electronic services. Several banks noted that there are trends that provide information on the market or on service needs, such as the fact there is a general anticipation of growth of most of the services being analyzed and a high level of interest in increased functionality, including use of a PC. A review of trends reported to be of interest in retail planning is shown in Exhibit VII-6.

Exhibit VII-6

Trends of Interest in Retail Service Planning

Retail Electronic Product	Useful Market and Product Information Indicated in Trend.
Home Banking	Customer Use of PC to Run Personal Financial Planning Software
ATM, Advanced ATM, or Kiosk	Interest in Additional Capabilities in Order to Divert Work from Branch Locations
Smart Card	Interest in Security Aspects of Smart Card and Tests of Stored-Value Products
Credit Card	Growing Competition from Banks and Nonbanks Worldwide
Debit Card	Acceptance by Banks and Merchants is Growing in the U.S.
Computer-Based Telephone Services	Rising Use of Cross-Selling
Internet-Based Banking Services	Integration of Internet Services and Other Retail Banking Business in the U.S.

Source: INPUT

These trends have provided ideas to a number of banks.

- For example, one bank stated that the rising use of cross-selling with computer-based telephone services had led it them to explore which other banks were selling by this means and to emulate this approach with its own offerings.
- Several banks noted that the rising competition in credit card business had led to actions involving incentives for using their credit cards as well as an emphasis on building relationships with clients that would save them fees and charges if a package of bank services were used.

- The rising interest in U.S. banks in achieving higher levels of security through Smart Card technology is being reviewed by some vendors. They want to be sure that their Smart Card products are addressing the interest of banks.

Trends identified by banks can also point out where further investigation is needed. The growing acceptance of debit cards in the U.S. means that debit card service is becoming a greater opportunity. However, the developments in Smart Card technology and plans for use of a card that would combine the functions of debit, ATM access, stored value, and possibly credit card must be explored before launching a limited debit card service, according to one major bank. Some banks reported that a danger in the current market was that banks were responding too rapidly to the interests of consumers. There is a tendency to be driven by trends rather than by business objectives.

b. Forces Driving Electronic Banking Services - U.S. and Non-U.S.

Although several of banks (mostly larger ones) report that their primary drivers are revenue, cost reduction, or competitive differentiation, most banks do not always have these objectives in mind, as illustrated in Exhibit VII-7. In this exhibit, driving forces referring to revenues, cost reduction, or competing for accounts are highlighted to aid review.

- In this exhibit, there is only one instance in which a primary driver is one of those identified above (cost reduction.).

Credit cards are the only category in which revenues are recognized as one of the first- or second-rated drivers.

Exhibit VII-7

Drivers Rated First and Second for Retail Electronic Banking Services

Retail Service or Product	Drivers in Asia, Europe, Latin America, Mid-East/Africa	Drivers Reported in North America
Home Banking	Competing for New Accounts and Meeting Demands of Customers	Demands of Customers and Opportunity to Take Advantage of Wide Use of PC
ATM, Advanced ATM, Kiosk	Cost Reduction and Meeting Demands of Customers	Customer Desire for Convenience and Bank Desire to Reduce Branch and Operational Costs
Smart Card	Convenience to Consumers and a Higher Degree of Security	Interest in Stored Value and Interest in Greater Security
Credit Card	Customer Demand and Revenue	Demand by Customers and Revenue Opportunities
Debit Card	Customer Demand and Cost Reduction	Retain and Gain Accounts; Cost Reduction
Computer-Based Telephone Services	Customer Demand and Competition	Customer Demand and Ability to Cross-Sell
Internet-Based Services	Customer Demand and Technology	Customer Demand and Internet Technology

Source: INPUT

Exhibit VII-7 shows that banks are partially driven by factors that can improve their performance. Some bank respondents pointed out that there is strong pressure from customers to offer retail electronic services, which is difficult not to respond to. These customers tend to be important accounts and have technical capabilities. However, the pressure to implement services without adequately planning to cover costs or make a profit can be a source of problems for banks.

3. Problems Arising from Retail Electronic Banking

Exhibit VII-8 lists some of the significant factors identified as possible inhibitors to these services or problems that could arise from introducing retail electronic banking services.

Exhibit VII-8

Problems or Inhibiting Factors Rated High for Retail Electronic Banking Services

Retail Service or Product	Problems in Asia, Europe, Latin America, Mid-East/Africa	Problems Reported in North America
Home Banking	Customers Have Problems in Using Service; Aid for Customers Can Be Costly	Customers Have Problems in Using Service; Uncertainty About Customer Interest
ATM, Advanced ATM, Kiosk	Profitability of ATMs and Security (From Fraud and Physical Damage)	Pay-Off on ATM-Related Costs; Costs of Servicing and Supporting ATMs
Smart Card	Uncertainty of Consumer Interest and Support Requirements	Uncertainty of Consumer Interest and Support Requirements
Credit Card	Excessive Competition; Customer Complaints About Fees and Charges	Market Dominance by Some Competitors; Complaints of Customers Regarding Complaint Resolution
Debit Card	Customer Preference for Credit Cards; Problems in Usage	Customer Preference for Credit Cards; Lack of Widespread Acceptance
Computer-Based Telephone Service	Services Don't Meet All Customer Needs; Uncertainty About Level of Customer Interest	Services Don't Meet All Customer Needs; Service May not Be Profitable
Internet-Based Services	Uncertainty About Development and Support Costs and About Level of Customer Interest	Uncertainty About Development and Support Costs and About Security

Source: INPUT

Banks in the U.S. and Canada and other regions agree on some problems, such as the challenge in making ATM systems profitable or the fact that some computer-based telephone users are not provided with capabilities. The latter suggests that users are interested in obtaining more services through computer-based telephone capabilities.

Although the factors listed above don't always stop banks from launching or upgrading retail electronic services, they do indicate the major worries of banks in regard to these services:

- Will there be enough customers to justify and pay for the service?
- Are estimates of development and support costs high enough?
- Will the bank implement the right set of services or enough services to meet customer expectations or needs?
- Can the bank provide an adequate level of support within estimated cost levels to meet customer needs?

There are other concerns reported by banks that affect the offering of retail electronic services:

- Will the development of debit cards cannibalize credit card revenue?
- Will Smart Card developments make debit card or other services obsolete?

The potential problems and concerns that have been discussed have led some banks to analyze their own situations in more detail. As indicated in Exhibit VII-9, a group of banks (about 25%-30%) report that they have started to develop a plan for embracing all retail electronic services and a small number note that they are developing plans that embrace all retail services.

Exhibit VII-9

Solutions or Approaches to Retail Electronic Banking Problems

Problems or Concerns Mentioned by Bank Respondents	General Solution or Approach to Problem Reported by Banks
Uncertainty About Interest of Customers in Retail Electronic Services	Have Qualified Firms Conduct Research on Depositors of Bank and on Banks Using Services
Deciding What Retail Electronic Services to Offer and What Features to Include	Develop a Plan that Can Be Reviewed by an Outside Consultant Under Worst-Case Scenarios
Developing Adequate Cost Estimates for Development and Support of Services	Conduct Structured Interviews with Banks that Have Launched Services
Handling Problems that Users Can Encounter	See Above; Also Obtain Information on State-of-the-Art Help Desk Functions Currently Implemented
Fear of Obsolescence in Steps Made to Establish a Retail Electronic Service	Research During Planning Should Include a Review of Technological Alternatives Announced or Planned

Source: INPUT

Bank respondents report that research did help them avoid moves that would have been obsolete in a short time. Inside teams as well as outside firms were used in these assignments. Structured questions or issues to consider were felt to be key to this undertaking.

C

Changes in Bank Operations and Payment Mechanisms

Banks in all regions expect changes in bank operations and performance to occur due to the use of new retail electronic banking services, as illustrated by Exhibit VII-10.

Exhibit VII-10

Anticipated Impact on Banking from Retail Electronic Services

Area of Impact/ Type of Impact	Average Rating of Impact in Non-North American Regions		Average Rating of Impact Anticipated in North America	
	1996	2001	1996	2001
Reduction in Branch Admin. Personnel and Costs	2.4	4.2	2.7	4.5
Reduction in Costs of Central Operations and IS	1.8	3.6	2.1	4.1
Increase in Bank Revenues	2.1	3.5	2.0	3.4
Increase in Capability to Compete Against Other Banks	2.6	3.4	2.8	3.8
Increase in Capability to Compete Against Nonbanks	2.1	3.6	2.2	3.4
Increase in Costs to Support Customers of Retail Electronic Services	2.8	3.9	2.5	3.8
Increase in Revenues from Remote, Internet-Based Services	1.7	2.8	2.1	3.6

1 = Low and 5 = High

Source: INPUT

Banks in all regions anticipate that retail electronic services will decrease branch or retail office services and costs. There are some differences in the anticipated impacts of these services, however.

- Banks in the U.S. expect more savings in branch operations.
- Banks in all regions expect retail electronic services to increase revenues and decrease overall operations and IS costs, but banks in North America are more hopeful about cost reductions.
- Banks in North America are more confident of the ability to use retail electronic banking services to compete against other banks, but less confident of the ability to use these services to compete against nonbanks. Several U.S. and Canadian banks mentioned that they were concerned about the plans not only of Microsoft, Intuit, and Checkfree, but also about the plans of AT&T, other telecommunication companies, and EDS.

Banks anticipate an impact from retail electronic services on the payment mechanisms and government regulations in regard to banking, as shown in Exhibit VII-11.

Exhibit VII-11

Anticipated Impact on Payment Mechanisms and Government Regulations

Anticipated Impact	Average Rating of Impact in Non-North American Regions		Rating of Impact Anticipated in North America	
	1996	2001	1996	2001
Reduction of Paper Checks Used in Payment	1.7	4.2	1.9	4.3
Reduction in Paper Checks Used for Cash	2.8	3.8	2.1	4.1
Electronic Money or Digital Cash Will Be Used by Banks on Networks	2.3	3.8	2.5	4.1
Possible Changes in Settlement for Electronic Items	2.1	3.5	2.4	4.2
Central Banks Such as the Federal Reserve in the U.S. Will Apply Regulations to Electronic Items	1.7	3.6	1.8	4.1

1 = Low and 5 = High

Source: INPUT

Banks expect considerable change in payments for electronic items, but generally have not developed a strategy for dealing with changes. Less than 10% of banks felt that they were prepared for the changes under way.

D

Differences in Use of the Internet, Other Technology, and Vendor Services

Although a small number of banks with specialized wholesale services think they will not feel an impact from retail electronic technology, practically all other banks expect to be impacted by the use of technology as a result of retail electronic services, as shown in Exhibit VII-12.

Exhibit VII-12

Impact of Technological Change to Support
Retail Electronic Banking Services, 1996-2001

Impact of Changes in Hardware or Software to Support Retail Electronic Services	Impact Anticipated in Asia	Impact Anticipated in Europe	Impact Anticipated in Latin America	Impact Anticipated in Mid East/ Africa	Impact Anticipated in North America
Home Banking	3.8	3.1	3.9	3.5	4.3
ATM, Advanced ATM, Kiosk	3.7	3.1	4.1	3.3	4.2
Smart Card	3.5	3.2	3.5	3.4	3.9
Credit Card	2.5	2.6	2.7	2.5	2.4
Debit Card	3.1	2.7	3.2	2.6	3.4
Computer-Based Telephone Services	2.5	2.1	2.5	2.4	2.9
Internet-Based Services	3.7	3.5	3.8	3.7	4.1

1 = Low and 5 = High

Source: INPUT

Based on the fact that they have had lengthy experience with retail electronic services (home banking and debit and Smart Cards), European banks tend to think that they are less likely to feel an impact from changes in technology to support retail electronic banking services. In contrast, there is an anticipation of more change in capabilities in Asia and Latin America, and particularly in North America.

- In North America, many banks are concerned about the introduction of new technology. Some are proactive - not waiting for change but trying to be in the vanguard. The majority seem to be waiting to see how successful new offerings such as DigiCash's E-cash product will be.
- DigiCash has found more success with banks and merchants in Europe. Vendors and banks in Sweden and Finland have launched services, and a roll-out of DigiCash products is expected in a number of European countries in the next year.

Past experience with debit and Smart Card offerings has made Europe more receptive to changes. However, the source of many new ideas such as those of DigiCash, Cybercash, Checkfree, and First Virtual Bank has been the U.S. In addition, there are attempts to generate large-scale acceptance of new ideas in the U.S., such as the ongoing activity of DigiCash to create a bank-owned consortium to back E-cash.

The activities of vendors and larger banks has caused an upturn in the attitude of North American banks toward the use of retail electronic banking, which is reflected in Exhibit VII-12.

- Many banks expect to repackage or introduce new home banking systems that make more use of PFS or other software, or of new payment alternatives being introduced by vendors. Banks also expect to tie more services to home banking, including information on investment or interest rates for lending, foreign exchange, or other products.
- Advertisements, pilot tests (including the test of Smart Cards during the Olympics and the joint project of Citicorp and Chase in N.Y.), and magazine articles on stored-value capabilities and the use of cards with chips have driven interest in planning for Smart Card services. (Some banks noted that their interest in Smart Cards also involved planning or consideration about debit cards, since they would be part of a combined plan.)

The Internet is the highest rated item in relation to changes in technology. Banks mentioned news items in various papers and magazines about the Internet, including the rush by a number of banks to establish a home page or use the Internet for delivery of services and marketing. This has led many banks to anticipate an impact from the use of Internet technology for retail electronic services, as illustrated in Exhibit VII-13.

Exhibit VII-13

Anticipated Impact of the Internet in Relation to
Retail Electronic Banking Services

Impact from the Following Uses of the Internet	Average Rating of Impact in Non-North American Regions 19		Rating of Impact Anticipated in North America	
		2001	1996	2001
Use of the Internet With Home Banking Systems	1.5	2.9	1.8	3.8
Remote Services that Depend on Use of the Internet (Remote Lending, Investment, Insurance, Trust)	1.3	3.1	2.0	3.7
Use of the Internet for Communication with Retail Services	1.4	3.5	2.0	3.4
Use of a Home Page To Serve or Attract Retail Customers or Prospects	2.1	3.9	3.1	4.1
Redesign of Retail Services To Take Advantage of the Internet	1.3	3.2	1.8	3.8

1 = Low and 5 = High

Source: INPUT

The Internet is increasing rapidly in popularity as a building block of retail services, but banks in North America are most committed to using it in 1996 and the future. All banks - or practically all banks - state that they eventually expect to make it part of their services. Even some small community banks report that this will be necessary.

Bank respondents report that the intensive use of technology including the Internet to support retail electronic services makes it necessary to consider using aid from other banks, banking organizations, consultants or information services vendors (ISVs), as indicated in Exhibit VII-14.

Exhibit VII-14

**Reasons for Using Other Banks, Banking Organizations, or ISVs
to Aid with Retail Electronic Services**

Aid Needed to Implement or Support Retail Electronic Services	Average Rating in Non- North American Regions		Average Rating in North America	
	1996	2001	1996	2001
Knowledge of New Technology like Advanced ATMs/Kiosks, Smart Cards or Digital Cash	2.8	3.2	2.9	3.8
In-Depth Experience in Banking	1.3	3.1	2.0	3.5
Experience in Implementing New Banking Technology	2.2	2.4	2.0	2.3
Experience in Outsourcing or Processing Retail Service or Product Like Card Issuance or ATM Networks	2.1	3.9	2.2	4.1
Banks or Vendors Who Have Developed Specific Systems or Software for New Retail Electronic Banking Services	3.3	3.8	3.5	3.9
Want to Use Vendors With General Capabilities, such as SI, Network Services, or Outsourcing	2.0	2.3	2.1	2.2

1 = Low and 5 = High

Source: INPUT

The preceding exhibit illustrates that knowledge of the technology involved, experience in implementing new developments in retail electronic systems, and experience in the areas where developments are being made such as card issuance or ATM systems, is much more important than experience in banking in general or general vendor capabilities. This helps to explain why vendors who have knowledge of technology as well as banking, such as PIK, Olivetti, or Cashfree, are obtaining contracts with banks.



Respondent Banks

Banks Interviewed

BANK	COUNTRY
ABN BANK	HOLLAND
ABSA BANK	SOUTH AFRICA
AM SOUTH BANK	U.S.
ADVANCE BANK	AUSTRALIA
AL BANK AL SAUDI AS FRANSI	SAUDI ARABIA
BANCA DE LA PROVINCIA	ARGENTINA
BANCA DELLE MARCHE	ITALY
BANCA NAZIONALE DELL' AGRICOLTURA	ITALY
BANCA PROMEX, S.A.	MEXICO
BANCAJA, CAJA DE AHORROS DE CATALUNA	SPAIN
BANCO AMBROSIANO VENETO SPA	ITALY
BANCO BILBAO	SPAIN
BANCO BOZANO	BRAZIL
BANCO COMMERCIALE	ITALY
BANCO CHASE MANHATTAN	BRAZIL
BANCO DE CREDITO E INVERSIONES	CHILE
BANCO DE GALICIA Y BUENOS AIRES	ARGENTINA
BANCO DE LA PROVINCIA DE BUENOS AIRES	ARGENTINA
BANCO DE MEGOCOS	SPAIN
BANCO DE ORIANTE, S.A.	MEXICO
BANCO DEL ATLANTICO	MEXICO
BANCO DO ESTADO DE SAO PAULO	BRAZIL

BANK	COUNTRY
BANCO DO ESTADO DO RIO GRANDE DO SUL	BRAZIL
BANCO EUROPA	BRAZIL
BANCO GANA DERO S.A.	COLOMBIA
BANCO MARIVA S.A.	SPAIN
BANCO MERCANTIL ARGENTINO, S.A.	ARGENTINA
BANCO MEXICANO, S.A.	MEXICO
BANCO OBRERO, S.A.	MEXICO
BANCO POPULAR	SPAIN
BANCO RIO DE LA PLATA	ARGENTINA
BANCO SANTANDER-CHILE	CHILE
BANCO TOSCANA	ITALY
BANCSPA BANK	BRAZIL
BANK FOR INTERNATIONAL SETTLEMENTS	SWITZERLAND
BANK OF AMERICA	U.S.
BANK OF CANADA	CANADA
BANK OF CHINA	CHINA
BANK OF COMMUNICATIONS	AUSTRALIA
BANK OF INDIA	INDIA
BANK OF MISSISSIPPI	U.S.
BANK IV	U.S.
BANK OF MONTREAL	CANADA
BANK OF NOVA SCOTIA	CANADA
BANK OF NY	U.S.
BANK OF QUEENSLAND	AUSTRALIA
BANK OF SCOTLAND	U.K.
BANK OF YOKOHAMA	JAPAN
BANK ONE	U.S.
BANKERS TRUST	U.S.
BANKERS TRUST INT'L	U.K.
BANQUE NATIONALE DE PARIS	FRANCE

BANK	COUNTRY
BANSUD	ARGENTINA
BARCLAYS BANK	U.K.
BARNETT BANK	U.S.
BASELLANDSCHAFTLICHE KANTONAL BANK	SWITZERLAND
BRADESCA	BRAZIL
BRANCK BANK & TRUST	U.S.
CAB	ITALY
CAISSE D'EPARGNE DU VAL DE LOIRE	FRANCE
CAJA DE AHORROS Y PENSIONES DE BARCELONA	SPAIN
CANADA TRUST	CANADA
CARIMONTE BANCA	ITALY
CASSA DI RISPARMIO DI VENEZIA SPA	ITALY
CENTRAL CAROLINA BANK & TRUST	U.S.
CHANG HWA COMMERCIAL BANK	TAIWAN
CHASE BANK	U.S.
CHEKIANG FIRST BANK, LTD.	HONG KONG
CHEMICAL BANK	U.S.
CIC	FRANCE
CITIBANK	U.S.
CITIBANK	U.K..
CITIZENS COMMERCIAL	U.S.
CNCA (CREDIT AGRICOLE MUTUEL)	FRANCE
COMERICA	U.S.
COMMERCE BANK	U.S.
COMMERCIA BANK	U.S.
COMPASS BANK	U.S.
CONFEDERACION ESPANOLA DE CAJAS	SPAIN
CORESTATES BANK	U.S.
CREDIT AGRICOLE DE LA CORREZE	FRANCE
CREDIT INDUSTRIEL	FRANCE

BANK	COUNTRY
CREDIT LYONNAIS	FRANCE
CREDIT MUTUEL DE LOIRE ATLANTIQUE ET CENTRE QUEST	FRANCE
CREDIT SUISSE	SWITZERLAND
CRESTAR	U.S.
DE NATIONALE INVESTERINGS BANK NV	BENELUX
DE NEDERLANDSCHE	BENELUX
DESJARDINS CAISSE	CANADA
DEUTSCHE BANK	GERMANY
DEUTSCHE CENTRAL BODENKREDIT- AKTIEN	GERMANY
DRESDNER BANK	GERMANY
FIDELITY BANK	U.S.
FIRST AMERICAN NAT'L BANK	U.S.
FIRST BANK SYSTEM	U.S.
FIRST CHICAGO	U.S.
FIRST CITIZENS BANK & TRUST	U.S.
FIRST OF AMERICA	U.S.
FIRST MICHIGAN	U.S.
FIRST NATIONAL BANK	U.S.
FIRST SECURITY BANK	U.S.
FIRST SOURCE BANK	U.S.
FIRST TENNESSEE	U.S.
FIRST VIRGINIA BANK	U.S.
FLEET FINANCIAL GROUP	U.S.
FULTON BANK	U.S.
GENERAL BANK	HOLLAND
HAMBURGER SPARKASSE	GERMANY
HIROSHIMA-SOGO BANK	JAPAN
HONG KONG BANK	HONG KONG
HUNAN COMMERCIAL BANK LTD.	TAIWAN
HUDSON BANK	U.S.
HUNTINGTON BANK	U.S.

BANK	COUNTRY
IMPERIAL BANK	U.S.
INDUSTRIAL BANK OF KOREA	SOUTH KOREA
ING BANK	NETHERLANDS
INTERNATIONAL BANK OF COMMERCE	U.S.
JP MORGAN	U.S.
KEY BANK	U.S.
KOREA EXCHANGE BANK	SOUTH KOREA
KOREA FIRST BANK	SOUTH KOREA
KREDIETBANK	BELGIUM
LANDESBANK RHEINLAND-PFALZ	GERMANY
LANDESKREDIT BANK BADEN-WURTTENBERG	GERMANY
MARINE MIDLAND	U.S.
MELLON BANK CORP.	U.S.
MERIDIAN BANK	U.S.
MICHIGAN NATIONAL BANK	U.S.
MIDLAND BANK	U.K.
MIDLANTIC BANK	U.S.
MONTREAL TRUST	CANADA
NANYANG COMMERCIAL BANK LTD.	HONG KONG
NATIONAL AUSTRALIA BANK	AUSTRALIA
NATIONAL BANK OF CANADA	CANADA
NATIONAL BANK OF COMMERCE	U.S.
NATIONAL BANK OF DETROIT	U.S.
NATIONAL BANK OF KUWAIT	KUWAIT
NATIONAL CITY BANK	U.S.
NATIONAL WESTMINSTER	U.K..
NEDCOR BANK LTD.	SOUTH AFRICA
NORWESTBANK	U.S.
OLD KENT BANK	U.S.
ONBANK TRUST CO.	U.S.
OSTERREICHISCHE VOLKSBANKEN A.G.	BENELUX
OVERSEAS UNION BANK LTD.	SINGAPORE

BANK	COUNTRY
PBS	DENMARK
PROVIDENT BANK	U.S.
PO SANG BANK LTD.	HONG KONG
PROVINCE OF ONTARIO SAVINGS OFFICE	CANADA
QUAKERTOWN BANK	U.S.
RADDBANK	HOLLAND
REALTIME CENTER AG BERN BEINE: KANTONAL BANK	SWITZERLAND
REGIONS FINANCIAL	U.S.
RIGGS BANK	U.S.
RIYADH BANK	SAUDI ARABIA
ROYAL BANK	CANADA
SAINT GEORGE BANK	U.K..
SAMUEL HILL MERCHANTS BANK	U.K.
SANWA BANK	JAPAN
SAUDI AMERICAN BANK	SAUDI ARABIA
SCHWEIZERISCHE NATIONAL BANK	SWITZERLAND
SHANGHAI COMMERCIAL BANK	CHINA
SHINHAN BANK	SOUTH KOREA
SIGNET BANK	U.S.
SKA SCHWEIZERSCHE KREDITANSTADT	SWITZERLAND
SKANDINARISKA ENSKILDA BANKEN	SWEDEN
SOCIETY NATIONAL BANK	U.S.
SOCIETE GENERALE	CANADA
SOUTH TRUST	U.S.
SPAR & LEIHLAASSE BERU	SWITZERLAND
STANDARD BANK	SOUTH AFRICA
STATE BANK OF INDIA	INDIA
SUN LIFE TRUST CO.	CANADA
SUN TRUST	U.S.
SVENSKA HANDELSBANKEN	BENELUX
SWISS BANK CORP.	SWITZERLAND
TAIPEI BANK COMPANY LTD.	TAIWAN

BANK	COUNTRY
THE BANK OF YOKOHAMA LTD.	JAPAN
THE HIROSHIMA BANK LTD.	JAPAN
THE INDUSTRIAL BANK OF JAPAN LTD.	JAPAN
THE IYO BANK LTD.	JAPAN
THE JAPAN DEVELOPMENT BANK	JAPAN
THE JOYO BANK	JAPAN
THE KA WAH BANK LTD.	HONG KONG
THE NIPPON CREDIT BANK LTD.	JAPAN
THE SAKURA BANK LTD.	JAPAN
THE SHIZUOKA BANK LTD.	JAPAN
THE SUMITOMO TRUST & BANKING CO.	JAPAN
THE TOKAI BANK	JAPAN
THE TRUST COMPANY OF NJ	U.S.
THE YAMAGUCHI BANK LTD.	JAPAN
TORONTO BANK	CANADA
TRUST BANK OF NEW ZEALAND LTD.	NEW ZEALAND
ULSTER BANK	U.K..
UMB-UNITED MIZRACHI BANK LTD. OF ISRAEL	ISRAEL
UNION BANK OF SWITZERLAND (in Canada)	CANADA
UNION BANK OF SWITZERLAND SBG, UBS	SWITZERLAND
UNION PLANTERS BANK	U.S.
UNITED CAROLINA BANK	U.S.
UNITED JERSEY BANK	U.S.
UNITED NATIONAL BANK	U.S.
UNITED STATES TRUST	U.S.
UTD MISSOURI BANK	U.S.
UTO OVERSEAS BANK LTD.	SINGAPORE
VALLEY NATIONAL	U.S.
VANCOUVER SAVINGS	CANADA
VICTORIA BANK	U.S.
WACHOVIA CORP.	U.S.

WELLS FARGO	U.S.
WESTPAC BANK	AUSTRALIA
YORKSHIRE BANK	U.K..
ZIONS FIRST NATIONAL	U.S.



The Questionnaire

ELECTRONIC BANKING QUESTIONNAIRE

INPUT is compiling data on worldwide use of electronic banking services like home banking and ATMs or use of the Internet. We would like to ask you a few questions on the types of electronic banking used by your bank. In return for your assistance, we will be sending you an executive summary of the study.

IA. Home Banking

1. Do you offer home banking services now? _____
(If yes, go to 3. If not, go to Q2.)
2. Do you plan to offer home banking services in the near future? _____
(If yes) When _____ (If no, please state why and go to next section.)
3. How many accounts use home banking? _____
How many will use in 5 years? _____
4. Do you offer the following services?

Service	Yes	Will offer in future (# of yrs.)	Will not offer
A means of handling recurring payments for utility bills or another purpose where the check amount can change?			
Handling of special customized payments?			
Payments that can be delayed until a date specified by the account holder?			
Provision of account balance information?			
Transfers between accounts?			
Other?			

5. What factors have driven your use of home banking?
Please rate on a scale of 1 - 5, with 5 = high

Factor	Rating
Demands or interests of depositors?	
Revenue and/or fee potential?	
Desire to lower DDA and operational costs?	
Competition from other banks?	
Competition from non-banks?	
Technology like Internet available?	
Potential of software products like Quicken/Money?	
Other	

6. Please describe importance of Quicken/Money types of products
7. What factors or problems are inhibiting the use of home banking?
Please describe and rate on a 1 to 5 basis.

8. Please rate the following benefits that you have obtained or anticipate from home banking, on a scale of 1 - 5. Please quantify any benefits in terms of revenue received now and in 5 years.

Benefit	Rating	\$ Amount Now	in 5 years
Revenues/fees			
Additional business from depositors			
New accounts			
Cost savings			
Customer satisfaction			
Other			

IB. ATM and Advanced ATM service

1. Do you offer ATM services now? _____ (If yes, go to 3. If not, go to Q2.)
2. Do you plan to offer ATM services in the near future? _____
(If yes) When _____ (If no, please state why and go to next section.)
3. How many accounts use ATMs? _____
How many will use in 5 years? _____

4. Do you offer the following services?

Service	Yes	Will offer in future (# of yrs.)	Will not offer
Features other than cash dispensing and deposit taking?			
Handling of special customized payments?			
Payments that can be delayed until a date specified by the account holder?			
Provision of account balance information?			
Transfers between accounts?			
Other?			

5. What factors have driven your use of ATMs and advanced ATM features?

Please rate on a scale of 1 - 5, with 5 = high

Factor	Rating
Demands or interests of depositors?	
Revenue and/or fee potential?	
Desire to lower DDA and operational costs?	
Competition from other banks?	
Competition from non-banks?	
Technology available? What technology?	
Other	

6. What factors or problems are inhibiting the use of advanced ATM features?
Please describe and rate on a 1 to 5 basis.
7. Please rate the following benefits that you have obtained or anticipate from advanced ATM features, on a scale of 1 - 5. Please quantify any benefits in terms of revenue received now and in 5 years.

Benefit	Rating	\$ Amount Now	in 5 years
Revenues/fees			
Additional business from depositors			
New accounts			
Cost savings			
Customer satisfaction			
Other			

IC. Smart Card based services

1. Do you offer Smart card based services now? _____
(If yes, go to 3. If not, go to Q2.)
2. Do you plan to offer these services in the near future? _____
(If yes) When _____ (If no, please state why and go to next section.)
3. How many accounts use smart card based services? _____
How many will use in 5 years? _____

4. Do you offer the following services?

Service	Yes	Will offer in future (# of yrs.)	Will not offer
Features other than cash dispensing and deposit taking?			
Handling of special customized payments?			
Payments that can be delayed until a date specified by the account holder?			
Provision of account balance information?			
Transfers between accounts?			
Other?			

5. What factors have driven your use of Smart Cards?

Please rate on a scale of 1 - 5, with 5 = high)

Factor	Rating
Demands or interests of depositors?	
Revenue and/or fee potential?	
Desire to lower DDA and operational costs?	
Competition from other banks?	
Competition from non-banks?	
Technology available? What technology?	
Other	

6. What factors or problems are inhibiting the use of Smart Cards?
Please describe and rate on a 1 to 5 basis.
7. Please rate the following benefits that you have obtained or anticipate from Smart Cards, on a scale of 1 - 5. Please quantify any benefits in terms of revenue received now and in 5 years.

Benefit	Rating	\$ Amount Now	in 5 years
Revenues/fees			
Additional business from depositors			
New accounts			
Cost savings			
Customer satisfaction			
Other			

ID. Debit and Credit Card based services

1. Do you offer credit/debit card based services now? ____
(If yes, go to 3. If not, go to Q2.)
2. Do you plan to offer these services in the near future? ____
(If yes) When ____ (If no, please state why and go to next section.)
3. What is the current number of credit card accounts? ____;
in five years? ____

How many current transactions per year? ____; in five years? ____

What is the current number of debit card accounts? ____; in five years? ____

How many debit card transactions per year? ____; in five years? ____

4. Do you offer the following services?

Service	Yes	Will offer in future (of yrs.)	Will not offer
Features other than standard credit and debit card use (not mentioned in the ATM section), such as discounts/rewards based on usage? (Describe below)			
Feature 1/Rating			
Feature 2/Rating			

5. Does your bank process credit and/or debit coupons or electronic images or do you have a vendor process them for you? (Please describe)
6. What factors have driven your use of credit/debit cards?

Please rate on a scale of 1 - 5, with 5 = high)

Factor	Rating
Demands or interests of depositors?	
Revenue and/or fee potential?	
Competition from other banks?	
Competition from non-banks?	
Technology available? What technology?	
Other	

7. What factors or problems are inhibiting the use of credit/debit cards?
Please describe and rate on a 1 to 5 basis.
8. Please rate the following benefits that you have obtained or anticipate from credit/debit card business, on a scale of 1 - 5. Please quantify any benefits in terms of revenue received now and in 5 years.

Benefit	Rating	\$ Amount Now	in 5 years
Revenues/fees			
Additional business from depositors			
New accounts			
Cost savings			
Customer satisfaction			
Other			

IE. Pay by Phone and "First Direct" Services

- Do you offer pay by phone or "First Direct" services now? ____
(If yes, go to 3. If not, go to Q2.)
- Do you plan to offer either of these services in the near future? ____
(If yes) When ____ (If no, please state why and go to next section.)
- How many accounts use pay by phone services? ____; in five years? ____
How many accounts use First Direct services? ____; in five years? ____

4. Do you offer the following services?

Service	Yes	Will offer in future (of yrs.)	Will not offer
Payment of bills only to an established list of payees (eg., phone or utility company?			
Handling of special customized payments?			
Payments that can be delayed until a date specified by the account holder?			
Provision of account balance information?			
Transfers between accounts?			
Marketing of savings and CDs?			
Selling money market and mutual funds?			
Recommend moving business (eg. credit cards) to your bank?			
Other?			

5. What factors have driven your use of advanced features and basic services?

Please rate on a scale of 1 - 5, with 5 = high

Factor	Rating
Demands or interests of depositors?	
Revenue and/or fee potential?	
Desire to lower DDA and operational costs?	
Competition from other banks?	
Competition from non-banks?	
Technology available? What technology?	
Other	

6. What factors or problems are inhibiting the use of advanced features and services?

Please describe and rate on a 1 to 5 basis.

7. Please rate the following benefits that you have obtained or anticipate from pay by phone or "First Direct" card business, on a scale of 1 - 5.

Benefit	Rating
Revenues/fees	
Additional business from depositors	
New accounts	
Cost savings	
Customer satisfaction	
Other	

IF. Electronic Banking Lending and Mortgage Services

1. Do you offer electronic lending and mortgage services now? ____
(If yes, go to 3. If not, go to Q2.)
2. Do you plan to offer these services in the near future? ____
(If yes) When ____ (If no, please state why and go to next section.)
3. How many accounts use these services? ____; in five years? ____

4. Do you offer the following services?

Service	Yes	Will offer in future (of yrs.)	Will not offer
A means of handling recurring payments for loans and mortgages?			
Do you market lending/mortgages on the Internet?			
On other networks? Which?			
Collection of data from prospects and clients on the Internet or other networks?			
Interact with prospects in regard to pricing via networks?			
Respond to requests for bids on lending or mortgages via nets?			
Other electronic features used for lending, mortgages, etc.? What?			
Provide account balance information?			

5. What factors have driven your use of electronic banking for lending/mortgages?

 Please rate on a scale of 1 - 5, with 5 = high

Factor	Rating
Demands or interests of depositors?	
Revenue and/or fee potential?	
Desire to lower DDA and operational costs?	
Competition from other banks?	
Competition from non-banks?	
Technology, like the Internet available? What technology?	
Other	

6. What factors or problems are inhibiting the use of these services?

 Please describe and rate on a 1 to 5 basis.

7. Please rate the following benefits that you have obtained or anticipate from these services, on a scale of 1 - 5.

Benefit	Rating
Revenues/fees	
Additional business from depositors	
New accounts	
Cost savings	
Customer satisfaction	
Other	

IG. Other Services: Insurance, Brokerage, Personal Trust. Other

- Do you offer any of these services electronically at this time? _____
(If yes, go to 3. If not, go to Q2.)
- Do you plan to offer these services in the near future? _____
(If yes) When _____ (If no, please state why and go to next section.)

3. How many accounts use these services? _____ Will use in 5 years _____

Service	Use Now	Will use in 5 yrs.

4. Which of these do you market on the Internet or other network? Please describe.
5. For which of these do you obtain data via the Internet or other networks?
6. Would you please describe other electronic services supporting these products. Specify whether the Internet or other networks are being used.

7. What factors have driven your use of electronic banking for these services?

Please rate on a 1, low to 5, high scale.

Factor	Rating
Demands or interests of depositors?	
Revenue and/or fee potential?	
Desire to lower operational costs?	
Competition from other banks?	
Competition from non-banks?	
Technology like Internet available?	
Potential of vendor products? Describe the use of these products	
Other	

8. What factors or problems are inhibiting the use of these services?

Please describe and rate on a 1 to 5 basis.

9. Please rate the benefits that you have obtained or anticipate from these services?

Please rate on a 1 to 5 scale.

Revenues/fees	Rating
Additional business from depositors	
New accounts	
Cost savings	
Customer satisfaction	
Other (what)	

II **Total Impact of Retail Electronic Banking on Operations**

1. Comparison of Retail Electronic Banking services. Would you please rate the impact and dollar benefits that each of the following services will have on retail electronic banking? Rate on a scale of 1 - 5, with 1 = low importance and 5 = high importance. (Dollar benefits -revenues, fees, new business and cost savings.)

Service	Impact-Now	Impact-in 5 yrs.	Dollar Benefits-Now	Dollar Benefits-in 5 yrs.
Home Banking				
ATM				
Advanced ATM				
Smart Cards				
Debit Cards				
Credit				
Lending services				
Mortgage services				
Personal Trust				
Other (what)				

2. What changes in the ways that payments are made (the payments mechanism) are occurring as a result of retail electronic banking?
3. In your opinion, are real changes taking place in retail banking services? (eg, In platform services, branch operations, other as a result of electronic banking?) Please describe these changes.
4. What are the biggest operational or other problems that you have encountered in retail electronic banking and use of the Internet and/or other networks? Please describe and include solutions if available.

5. What percentage of your business results from Electronic Banking? What about for the next few years? (check the proper category.)

Percent of Business	<u>1995</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
< 10%				
10 - 20%				
20 - 30%				
30 - 50%				
50 - 70%				
70 - 90%				
> 90%				

6. What new developments does your bank want to see in electronic banking?
7. Any other comments?
8. Would this type of information be useful to your bank for planning purposes?
9. Who would be the proper person to contact at the bank?

